# PROBLEM SUMMARY

Sample Rating Trend


**WEAR**

Area
**[FS31004]**
Machine Id
## CARRIER NIVM BOIS LEGER
Component
**Chiller**
Fluid
**REFRIGERATION OIL (POE) (--- GAL)**

## COMPONENT CONDITION SUMMARY

No relevant graphs to display

## RECOMMENDATION

The operation of this unit should be monitored by a service engineer. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | ABNORMAL | --- | --- |
| Iron | ppm | ASTM D5185(m) | >8 | ▲ 7 | --- | --- |
| Tin | ppm | ASTM D5185(m) | >4 | ▲ 3 | --- | --- |

**Customer Id:** GTT0000370
**Sample No.:** GTT0001201
**Lab Number:** 02602970
**Test Package:** IND 2

*To manage this report scan the QR code*

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## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Information Required | --- | --- | ? | Please specify the brand, type, and viscosity of the oil on your next sample. |

## HISTORICAL DIAGNOSIS

# OIL ANALYSIS REPORT

Sample Rating Trend


**WEAR**

Area
**[FS31004]**
Machine Id
## CARRIER NIVM BOIS LEGER
Component
**Chiller**
Fluid
**REFRIGERATION OIL (POE) (--- GAL)**

## DIAGNOSIS

**Recommendation**

The operation of this unit should be monitored by a service engineer. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

**Wear**

Iron and tin ppm levels are abnormal. The tin level suggests that bearing wear is indicated. Check the system for the cause of high iron content, such as cylinder wear, valve wear or system residues.

**Contamination**

There is no indication of any contamination in the oil.

**Fluid Condition**

The AN level is acceptable for this fluid.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GTT0001201** | --- | --- |
| Sample Date | | Client Info | | **01 Dec 2023** | --- | --- |
| 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 | ▲ **7** | --- | --- |
| 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 | **<1** | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >3 | **<1** | --- | --- |
| Lead | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >8 | **<1** | --- | --- |
| Tin | ppm | ASTM D5185(m) | >4 | ▲ **3** | --- | --- |
| 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) | 0 | **<1** | --- | --- |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Manganese | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 10 | **0** | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | 250 | **0** | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 0 | **<1** | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | 400 | **31** | --- | --- |
| Lithium | ppm | ASTM D5185(m) | | **<1** | --- | --- |

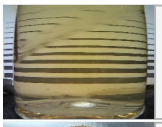
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **4** | --- | --- |
| Sodium | ppm | ASTM D5185(m) | | **2** | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | **6** | --- | --- |
| ppm Water | ppm | ASTM D6304* | >200 | **66** | --- | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.07 | **0.02** | --- | --- |

# 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) | | **79.3** | --- | --- |

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

GRAPHS

**Sample No.** : GTT0001201
**Lab Number** : 02602970
**Unique Number** : 5696055
**Test Package** : IND 2 ( Additional Tests: KV40 )

**Recieved** : 13 Dec 2023
**Diagnosed** : 15 Dec 2023
**Diagnostician** : 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.*
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