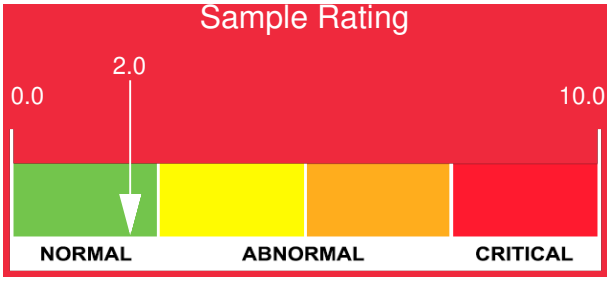
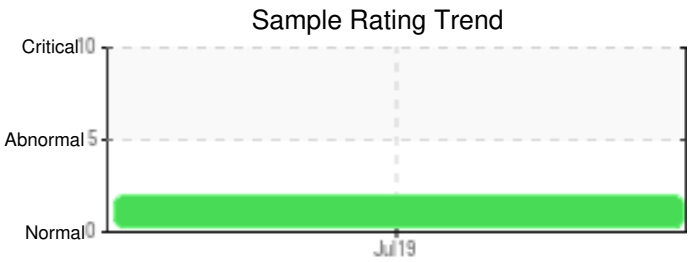


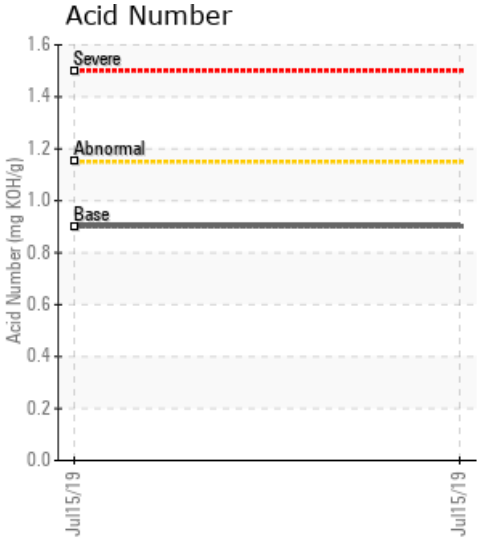

# [KUMAS MANYEZIT ISLETMELERI A.S] HEAT TRANSFER OIL

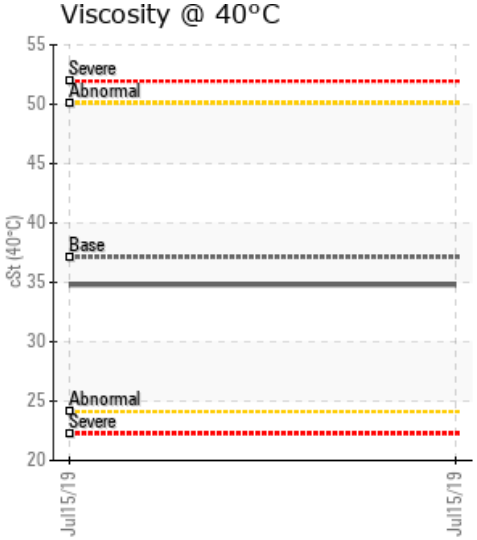
| Customer: PTRHTF40074 | System Information | Sample Information |
|---|---|---|
| LUBRICON LTD STI<br>ATASEHIR<br>ISTANBUL<br>ISTANBUL, 34770<br>Attn: Murat Baslilar<br>Tel: x:<br>E-Mail: mbaslilar@lubricon.com.tr | System Volume: 500 ltr<br>Bulk Operating Temp: 455F / 235C<br>Heating Source:<br>Blanket:<br>Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID<br>Make: | Lab No: 02298378<br>Analyst: Philip Riley<br>Sample Date: 07/15/19<br>Received Date: 07/22/19<br>Completed: 07/31/19 |

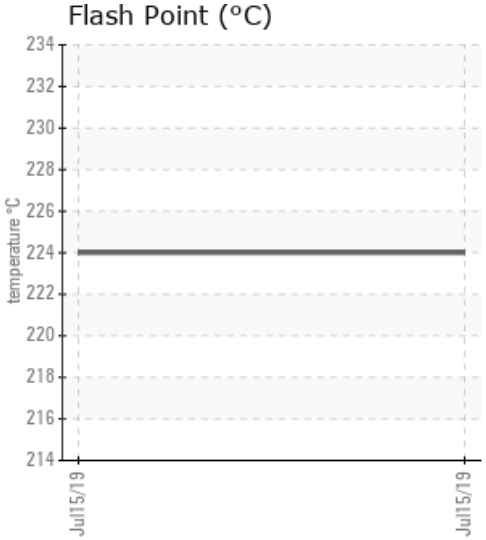
Recommendation: Please check system and history as the Zn levels are high with visible metal present in the sample. Recommend a check of the system to look for faults and/or some form of safe filtration. Other main parameters for the fluid itself raise no concerns, but recommend system and part check for the debris present to be identified alongside where in the system it could be sourced from (or work may have been carried out ahead of fill).

Comments: Light concentration of visible metal present. Zinc ppm levels are severely high. (GCD) 90% Distillation Point is marginally high.

| Sample Date | Received Date | Fluid Age | Sample Location | Flash Point (COC) | Water (KF) | Viscosity (40°C) | Acid Number | Solids | GCD 10% | GCD 50% | GCD 90% | GCD % < 335°C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm/dd/yy | | | °F/°C | ppm | cSt | mg/KOH/g | %wt | °F/°C | °F/°C | °F/°C | % |
| 07/15/19 | 07/22/19 | 1000h | BEFORE FILTER | 435 / 224 | 238.7 | 34.8 | 0.904 | 0.134 | 716 / 380 | 811 / 433 | 917 / 492 | 0.90 |
| Baseline Data | | | | 459 / 237 | | 37.12 | 0.90 | | 721 / 383 | 807 / 431 | 892 / 478 | 1.5 |

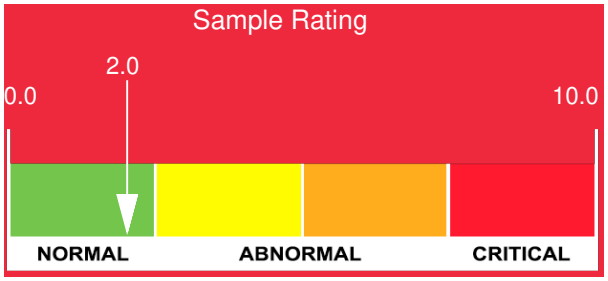


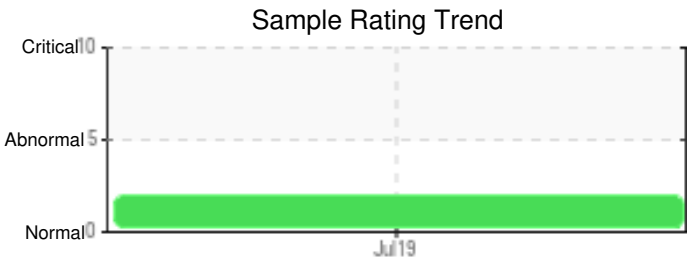



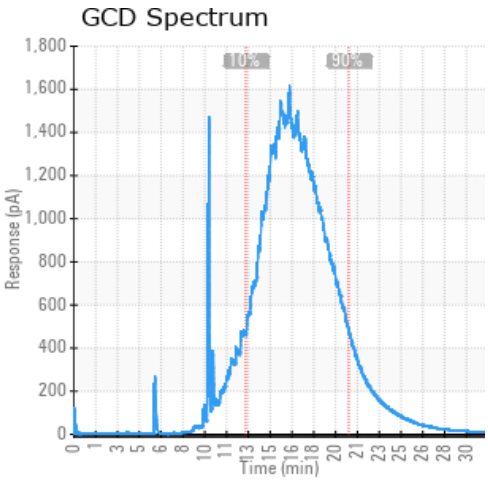
PETRO-CANADA LUBRICANTS

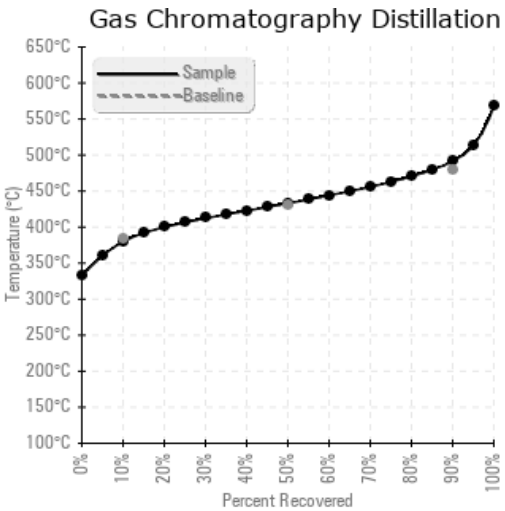


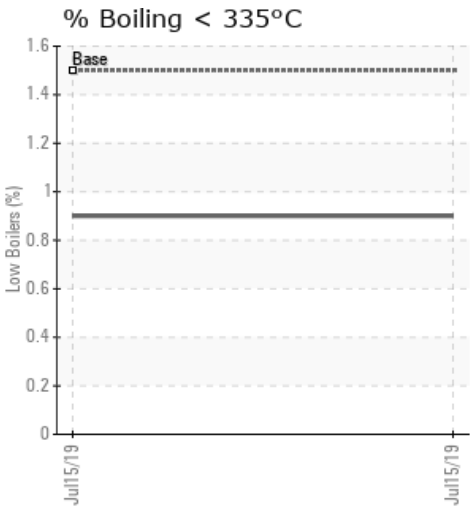




| Sample Date | Iron | Chromium | Nickel | Aluminum | Copper | Lead | Tin | Cadmium | Silver | Vanadium | Silicon | Sodium | Potassium | Titanium | Molybdenum | Antimony | Manganese | Lithium | Boron | Magnesium | Calcium | Barium | Phosphorus | Zinc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 07/15/19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 2 | 0 | 11 | 108 |
| Baseline Data | | | 0 | 0 | | | | | | 0 | | | 0 | 0 | | | | | 0 | | | | 230 | |

Elemental anaysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]




## Historical Comments

| | |
|---|---|
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