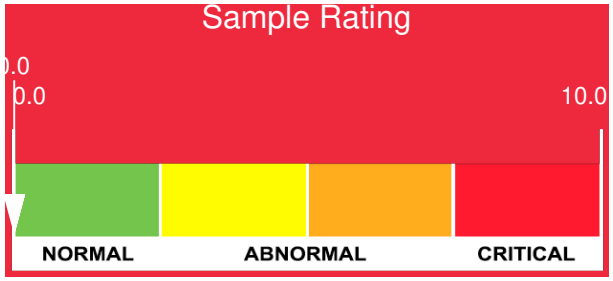
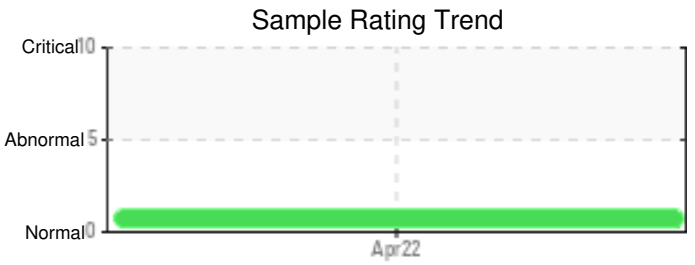




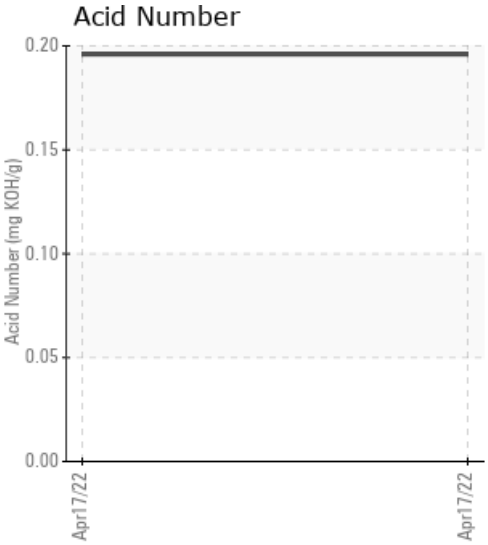
THERMOL PLUS

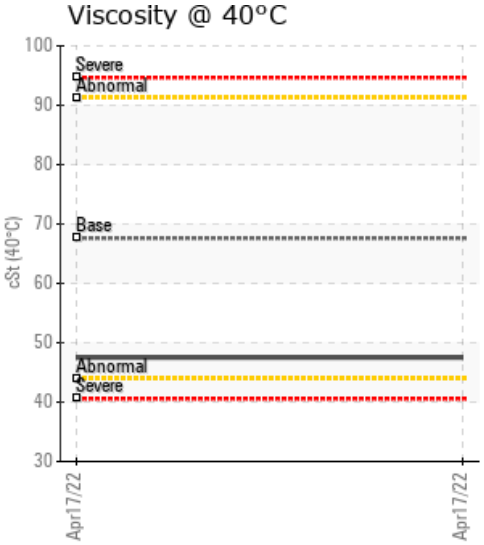
Customer:	System Information	Sample Information
TULCO OILS INC CORPORATE 5240 EAST PINE TULSA, OK 74115 USA Attn: RICK MCCLEER Tel: (800)375-2347 E-Mail: rickmccleer@tulco.com	System Volume: 0 gal Bulk Operating Temp: Not Specified Heating Source: Blanket: Fluid: THERMOL PLUS HEAT TRANSFER OIL 68 Make:	Lab No: 05521177 Analyst: Bill Quesnel CLS,OMA II,MLA-III,LLA-I Sample Date: 04/17/22 Received Date: 04/15/22 Completed: 05/02/22 Bill Quesnel CLS,OMA II,MLA-III,LLA-I

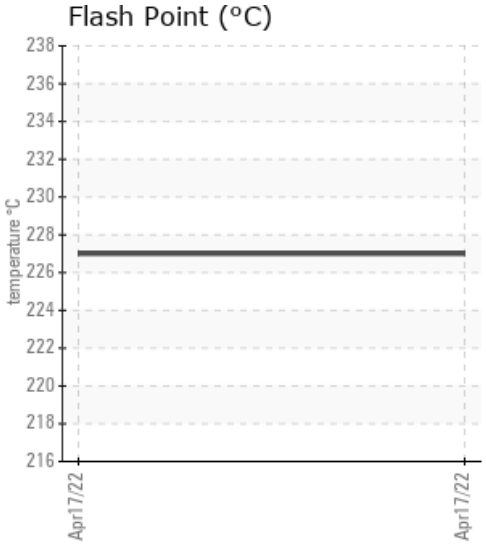
Recommendation: Resample at the next service interval to monitor. Diagnostician's Note: The thermal fluid appears to be a mix of two different viscosity fluids (ISO 32 and 68 likely). As a result the viscosity is much lower than expected. The flash point of the fluid is acceptable at 227°C, so unless there is an issue with your system regarding safety at the temperature, the fluid is good for continued use. In fact, the lower viscosity will provide more efficient heat transfer if anything. There is a small amount of volatile light ends, you could attempt to remove by venting the expansion tank.

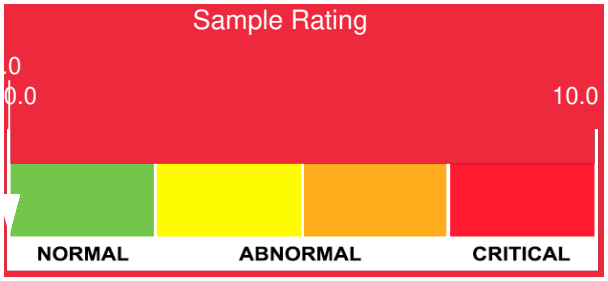
Comments: All component wear rates are normal. This appears to be a mixture of two thermal fluid products (an ISO 32 and an ISO 68). No other contaminants were detected in the fluid. Viscosity of sample indicates oil is within ISO 46 range, advise investigate. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

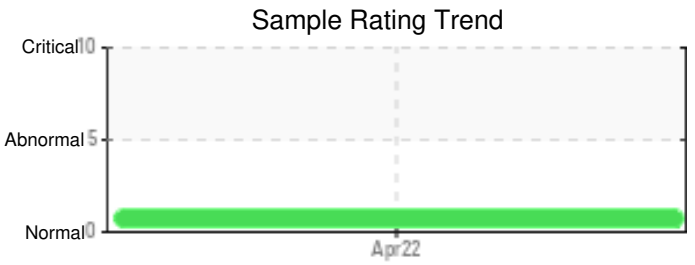
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/17/22	04/15/22	0.0h		441 / 227	124.7	47.5	0.196	0.322	710 / 377	856 / 458	1004 / 540	2.53
Baseline Data				480 / 249		67.6			743 / 395	851 / 455	952 / 511	1.6







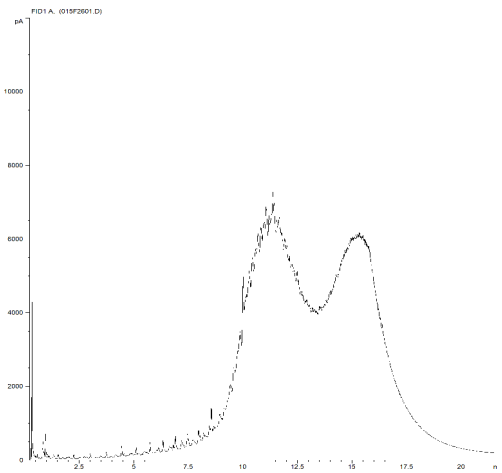


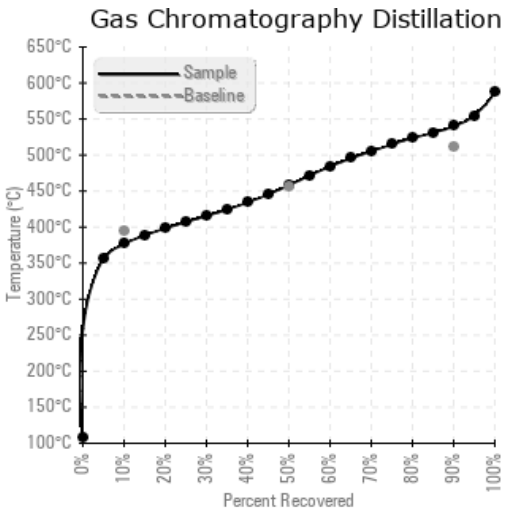


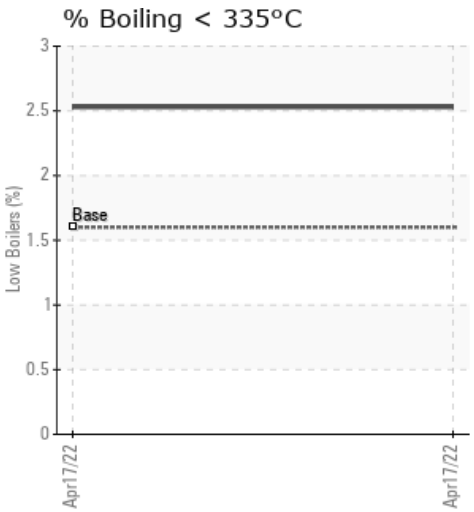
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
04/17/22	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0		0	0	12	0	5	0
Baseline Data			0	0						0			0	0				0	0				0	

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

GCD Spectrum







Historical Comments
