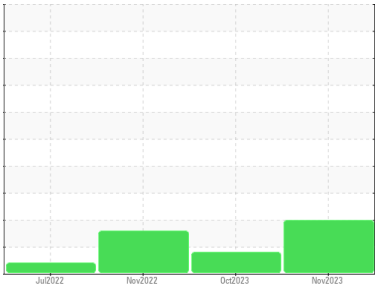
PROBLEM SUMMARY

Sample Rating Trend

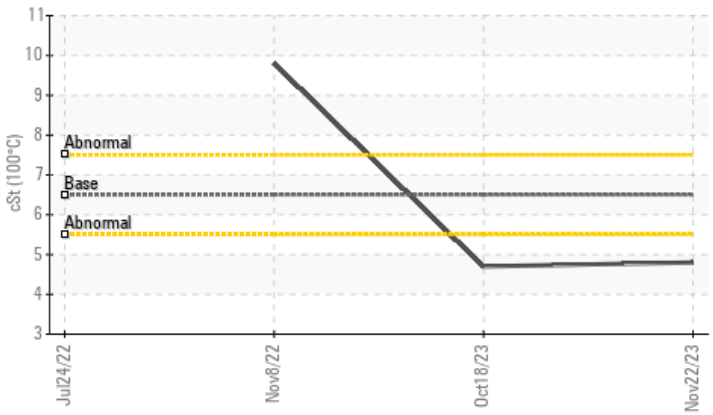


VISCOSITY

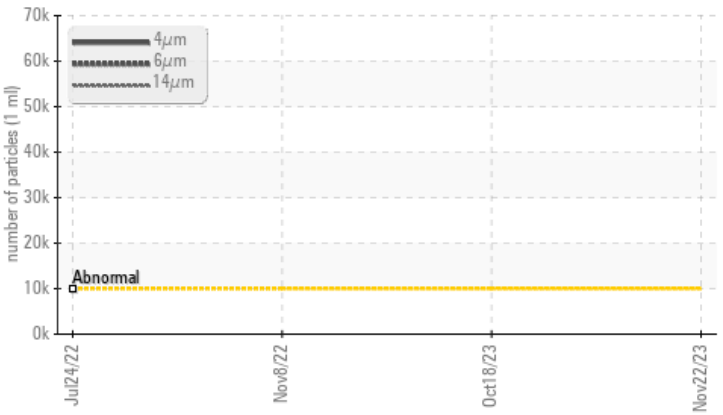
Area
Vessel
Machine Id
KAT 014 (Refrigeration Compressors #1 & #2)
Component
Compressor
Fluid
ESSO ZERICE S 68 (250 LTR)

COMPONENT CONDITION SUMMARY

▲ Viscosity @ 100°C



▲ Particle Trend



RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	ATTENTION
Particles >4µm		ASTM D7647	>10000	▲ **66101**	---	---
Particles >6µm		ASTM D7647	>2500	▲ **17897**	---	---
Particles >14µm		ASTM D7647	>320	▲ **441**	---	---
Oil Cleanliness		ISO 4406 (c)	>20/18/15	▲ **23/21/16**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	6.5	▲ **4.8**	▲ 4.7	9.8

Customer Id: KATSHESH
Sample No.: PC0080267
Lab Number: 02601876
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

18 Oct 2023 Diag: Kevin Marson

VISCOSITY

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. Viscosity of sample indicates oil is within ISO 46 range, advise investigate. The condition of the oil is acceptable for the time in service.

view report

08 Nov 2022 Diag: Kevin Marson

ADDITIVES

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

view report

24 Jul 2022 Diag: Kevin Marson

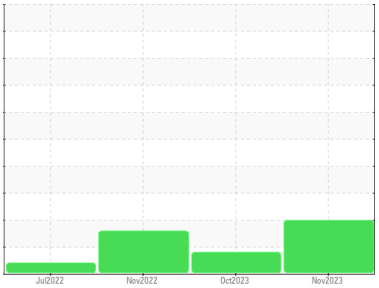
VISCOSITY

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The condition of the oil is acceptable for the time in service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Area
Vessel
Machine Id
KAT 014 (Refrigeration Compressors #1 & #2)
Component
Compressor
Fluid
ESSO ZERICE S 68 (250 LTR)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0080267**	PC0018596	PC0031768
Sample Date		Client Info		**22 Nov 2023**	18 Oct 2023	08 Nov 2022
Machine Age	mths	Client Info		**0**	0	0
Oil Age	mths	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>50	**9**	7	23
Chromium	ppm	ASTM D5185(m)	>5	**0**	0	0
Nickel	ppm	ASTM D5185(m)		**<1**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**<1**	<1	0
Aluminum	ppm	ASTM D5185(m)	>15	**0**	0	0
Lead	ppm	ASTM D5185(m)	>65	**<1**	<1	0
Copper	ppm	ASTM D5185(m)	>65	**2**	1	1
Tin	ppm	ASTM D5185(m)	>10	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**<1**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

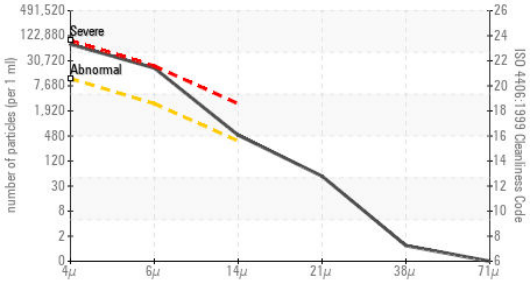
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**1**	2	<1
Barium	ppm	ASTM D5185(m)		**0**	<1	0
Molybdenum	ppm	ASTM D5185(m)		**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	<1
Magnesium	ppm	ASTM D5185(m)		**0**	0	4
Calcium	ppm	ASTM D5185(m)		**<1**	0	▲ 42
Phosphorus	ppm	ASTM D5185(m)		**<1**	<1	▲ 311
Zinc	ppm	ASTM D5185(m)		**1**	<1	▲ 339
Sulfur	ppm	ASTM D5185(m)		**17**	12	▲ 2352
Lithium	ppm	ASTM D5185(m)		**<1**	1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>35	**2**	1	3
Sodium	ppm	ASTM D5185(m)		**8**	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	**24**	0	0
Water	%	ASTM D6304*	>0.1	**0.002**	---	---
ppm Water	ppm	ASTM D6304*	>1000	**17**	---	---

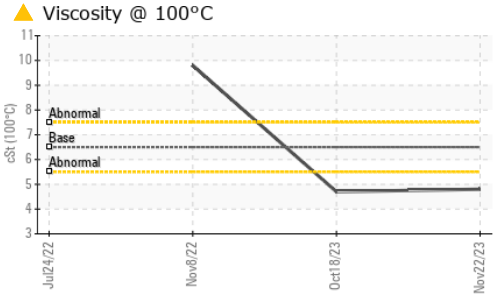
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	▲ **66101**	---	---
Particles >6µm		ASTM D7647	>2500	▲ **17897**	---	---
Particles >14µm		ASTM D7647	>320	▲ **441**	---	---
Particles >21µm		ASTM D7647	>80	**46**	---	---
Particles >38µm		ASTM D7647	>20	**1**	---	---
Particles >71µm		ASTM D7647	>4	**0**	---	---
Oil Cleanliness		ISO 4406 (c)	>20/18/15	▲ **23/21/16**	---	---

OIL ANALYSIS REPORT

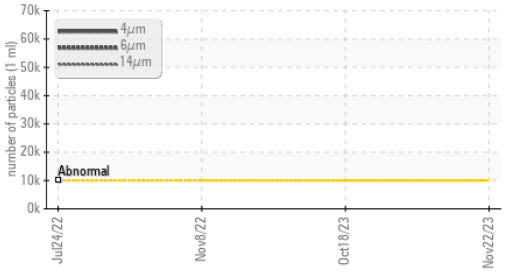
Particle Count



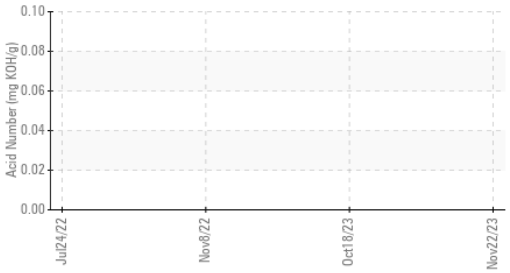
Viscosity @ 100°C



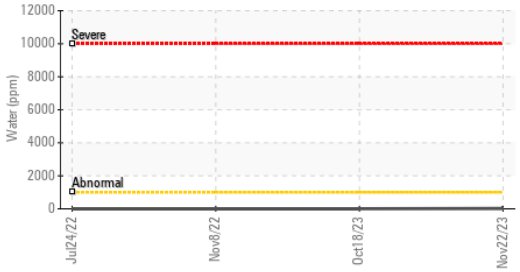
Particle Trend



Acid Number



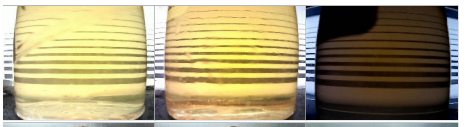
Water (KF)



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.08**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	VLITE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	64	**57.9**	▲ 44.8	64.0
Visc @ 100°C	cSt	ASTM D7279(m)	6.5	▲ **4.8**	▲ 4.7	9.8
Viscosity Index (VI)	Scale	ASTM D2270*		**---**	---	136

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080267
Lab Number : 02601876
Unique Number : 5694961
Test Package : IND 2 (Additional Tests: KF, KV100, TAN Man, VI)

Received : 08 Dec 2023
Diagnosed : 11 Dec 2023
Diagnostician : Kevin Marson

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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Report Id: KATSHESH [WCAMIS] 02601876 (Generated: 12/11/2023 07:19:10) Rev: 1

Submitted By: Stephen Elliott