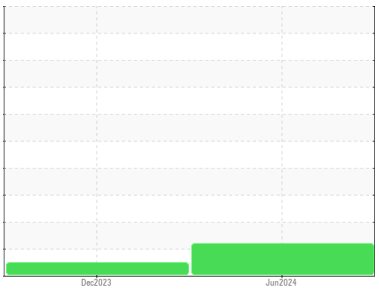
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
TOYOTA 19444
Component
Gasoline Engine
Fluid
GASOLINE ENGINE OIL SAE 0W20 (6 QTS)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of particulates present in the oil.

Fluid Condition
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KLM2337880**	KLMFA17278	---
Sample Date		Client Info		**16 Jun 2024**	17 Dec 2023	---
Machine Age	mls	Client Info		**100634**	96502	---
Oil Age	mls	Client Info		**20000**	10000	---
Oil Changed		Client Info		**Not Changd**	Not Changd	---
Sample Status				**ATTENTION**	NORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	---
Water		WC Method	>0.2	**NEG**	NEG	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	**12**	4	---
Chromium	ppm	ASTM D5185m	>20	**<1**	0	---
Nickel	ppm	ASTM D5185m	>5	**0**	0	---
Titanium	ppm	ASTM D5185m		**<1**	0	---
Silver	ppm	ASTM D5185m	>2	**0**	0	---
Aluminum	ppm	ASTM D5185m	>40	**5**	2	---
Lead	ppm	ASTM D5185m	>50	**0**	0	---
Copper	ppm	ASTM D5185m	>155	**<1**	<1	---
Tin	ppm	ASTM D5185m	>10	**0**	<1	---
Vanadium	ppm	ASTM D5185m		**<1**	0	---
Cadmium	ppm	ASTM D5185m		**<1**	0	---

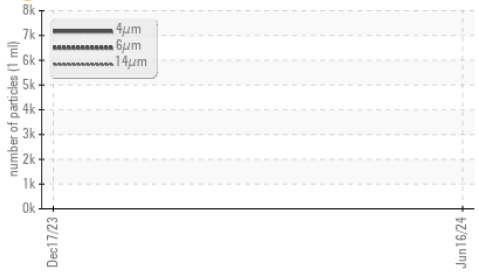
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	75	**11**	15	---
Barium	ppm	ASTM D5185m	5	**0**	0	---
Molybdenum	ppm	ASTM D5185m	100	**93**	82	---
Manganese	ppm	ASTM D5185m		**<1**	<1	---
Magnesium	ppm	ASTM D5185m	12	**428**	421	---
Calcium	ppm	ASTM D5185m	2100	**1344**	1052	---
Phosphorus	ppm	ASTM D5185m	650	**721**	590	---
Zinc	ppm	ASTM D5185m	850	**808**	741	---
Sulfur	ppm	ASTM D5185m	2500	**3289**	1891	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	**29**	21	---
Sodium	ppm	ASTM D5185m	>400	**3**	1	---
Potassium	ppm	ASTM D5185m	>20	**3**	2	---

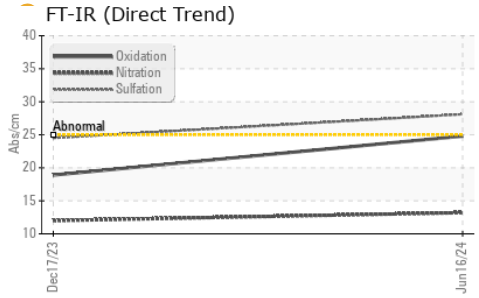
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	**13.2**	12.0	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**28.1**	24.5	---

OIL ANALYSIS REPORT

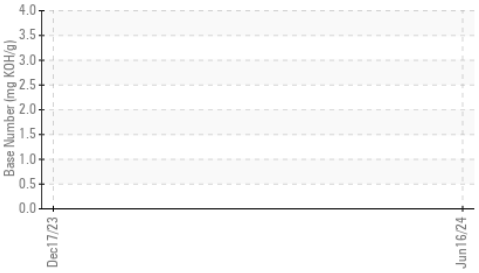
Particle Trend



FT-IR (Direct Trend)

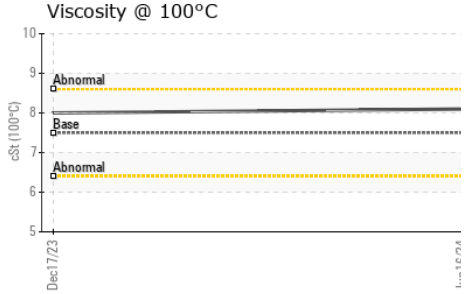


Base Number



Acid Number

Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**7064**	---	---
Particles >6µm		ASTM D7647	>5000	**3848**	---	---
Particles >14µm		ASTM D7647	>640	**655**	---	---
Particles >21µm		ASTM D7647	>160	**221**	---	---
Particles >38µm		ASTM D7647	>40	**34**	---	---
Particles >71µm		ASTM D7647	>10	**3**	---	---
Oil Cleanliness		ISO 4406 (c)	>19/16	**19/17**	---	---

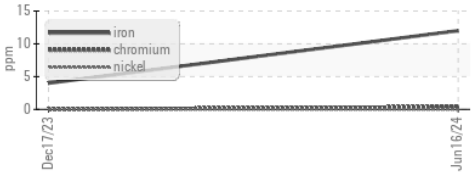
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**24.8**	18.9	---
Acid Number (AN)	mg KOH/g	ASTM D8045		**3.26**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		**---**	3.6	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	---
Appearance	scalar	*Visual	NORML	**NORML**	NORML	---
Odor	scalar	*Visual	NORML	**NORML**	NORML	---
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	---
Free Water	scalar	*Visual		**NEG**	NEG	---

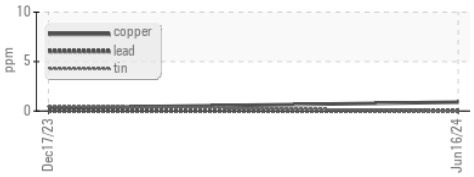
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	7.5	**8.1**	8	---

GRAPHS

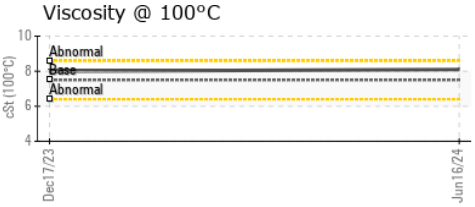
Ferrous Alloys



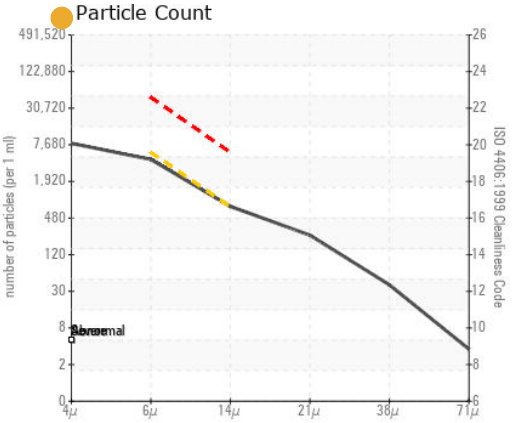
Non-ferrous Metals



Viscosity @ 100°C



Particle Count



Acid Number

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KLM2337880 **Received** : 21 Jun 2024
Lab Number : 06217043 **Tested** : 24 Jun 2024
Unique Number : 11089907 **Diagnosed** : 24 Jun 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: PrtCount, TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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