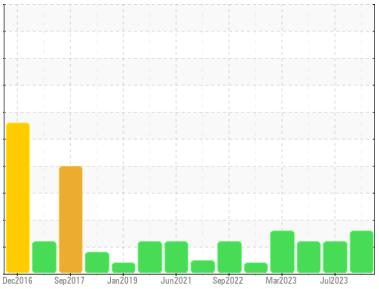
PROBLEM SUMMARY

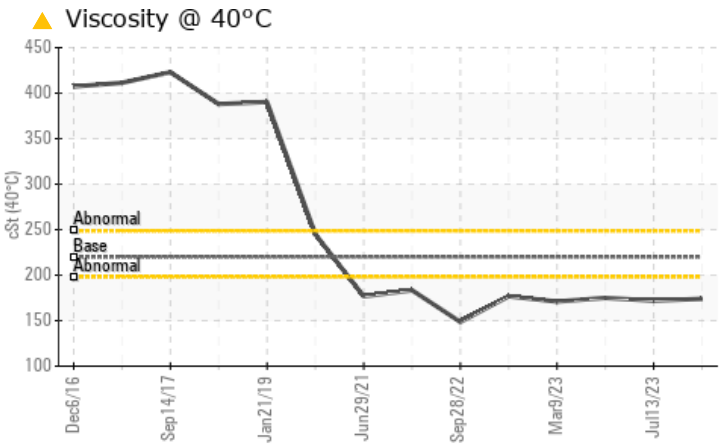
Sample Rating Trend

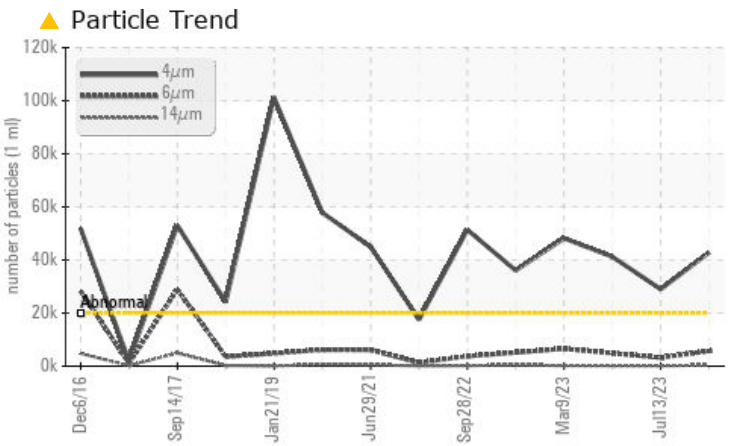


VISCOSITY

Area
REACTOR 2
Machine Id
A2 AGITATOR (S/N 11540A)
Component
Gearbox
Fluid
ROYAL PURPLE SYNFILM GT220 (13 GAL)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

No corrective actions at this time. While the viscosity continues to be low, it is acceptable for the agitator type. Continue to sample at the standard interval.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Particles >4µm		ASTM D7647	>20000	▲ **42826**	▲ 28995	▲ 41213
Particles >6µm		ASTM D7647	>5000	▲ **5668**	3210	4886
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **23/20/16**	▲ 22/19/14	▲ 23/19/14
Visc @ 40°C	cSt	ASTM D445	220	▲ **174**	▲ 172	▲ 175

Customer Id: HEXHOPAR
Sample No.: PLS0000745
Lab Number: 05962832
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Mike Johnson +1 (615)771-6030
mike.johnson@amrri.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

13 Jul 2023 Diag: Doug Bogart

VISCOSITY

No corrective actions at this time. While the viscosity continues to be low, it is acceptable for the agitator type. Continue to sample at the standard interval.The wear rate is low and steady Particles concentration is slightly elevated above what is expected for new oil. Visc @ 40°C is substantially low, but is within the trend for multiple samples. Based on additive concentrations that should not be present, there is an appearance of mixture with other oil types, but this condition is steady over multiple sample events. Other fluid health parameters suggest the lubricant is safe for continued use.

view report

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10 Jun 2023 Diag: Mike Johnson

VISCOSITY

Filter oil if possible using B6=75 filter media or better. Confirm oil specification. Oil Viscosity is low compared to specification on file.Wear particles are low and acceptable. Containation is slightly elevated. Filtration can help extend machine life. Fluid Viscosity is lower then the provided specification. If you believe the specification to be in error, contact Mike.Johnson@amrri.com to discuss and change fluid references.

view report

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09 Mar 2023 Diag: Mike Johnson

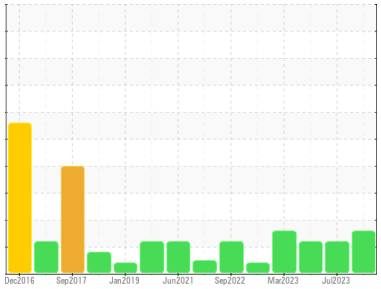
VISCOSITY

Filter oil if possible using B6=75 filter media or better. Confirm oil is 220 or 150 oil. No other action required at this time. Resample at next normal interval.Wear particles are low and steady. Contamination is elevated in the sample. Confirm sample port is optimally placed. Filtration can extend machine life. Fluid viscosity is significantly lower than the reference oil of an ISO 220 viscosity. Confirm oil type.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Area
REACTOR 2
Machine Id
A2 AGITATOR (S/N 11540A)
Component
Gearbox
Fluid
ROYAL PURPLE SYNFILM GT220 (13 GAL)

DIAGNOSIS

Recommendation
No corrective actions at this time. While the viscosity continues to be low, it is acceptable for the agitator type. Continue to sample at the standard interval.

Wear
The wear rate is low and steady.

Contamination
Particles concentration is slightly elevated above what is expected for new oil.

Fluid Condition
Visc @ 40°C is substantially low, but is within the trend for multiple samples. Based on additive concentrations that should not be present, there is an appearance of mixture with other oil types, but this condition is steady over multiple sample events. Other fluid health parameters suggest the lubricant is safe for continued use.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PLS0000745**	PLS0000731	PLS0000607
Sample Date		Client Info		**12 Sep 2023**	13 Jul 2023	10 Jun 2023
Machine Age	mths	Client Info		**7**	5	4
Oil Age	mths	Client Info		**7**	5	4
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**16**	14	19
Iron	ppm	ASTM D5185m	>200	**6**	8	8
Chromium	ppm	ASTM D5185m	>15	**0**	<1	0
Nickel	ppm	ASTM D5185m	>15	**0**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	**0**	2	0
Lead	ppm	ASTM D5185m	>100	**0**	<1	<1
Copper	ppm	ASTM D5185m	>200	**1**	2	1
Tin	ppm	ASTM D5185m	>25	**0**	0	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	0	2
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	90	**57**	77	64
Calcium	ppm	ASTM D5185m		**8**	12	11
Phosphorus	ppm	ASTM D5185m		**39**	48	36
Zinc	ppm	ASTM D5185m		**0**	18	13
Sulfur	ppm	ASTM D5185m		**18600**	24121	17221

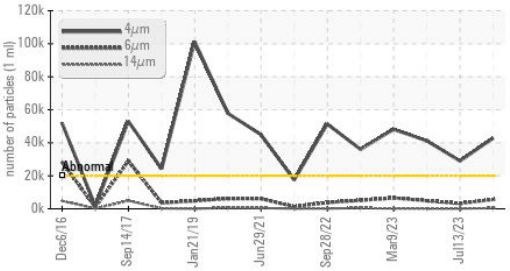
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**5**	7	6
Sodium	ppm	ASTM D5185m		**3**	4	2
Potassium	ppm	ASTM D5185m	>20	**<1**	1	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0.1
Nitration	Abs/cm	*ASTM D7624		**2.7**	2.8	2.9
Sulfation	Abs/.1mm	*ASTM D7415		**28.0**	28.9	29.0

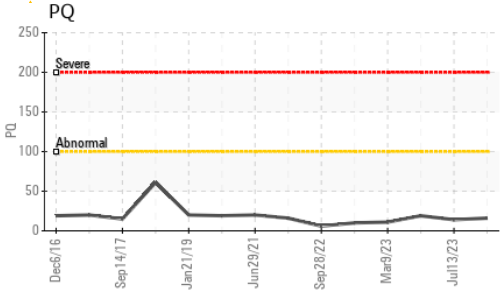
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	▲ **42826**	▲ 28995	▲ 41213
Particles >6µm		ASTM D7647	>5000	▲ **5668**	3210	4886
Particles >14µm		ASTM D7647	>640	**411**	118	142
Particles >21µm		ASTM D7647	>160	**122**	35	25
Particles >38µm		ASTM D7647	>40	**6**	5	1
Particles >71µm		ASTM D7647	>10	**2**	3	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **23/20/16**	▲ 22/19/14	▲ 23/19/14

OIL ANALYSIS REPORT

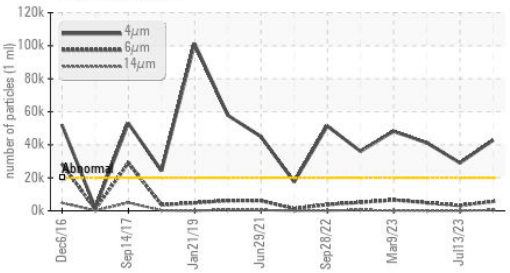
Particle Trend



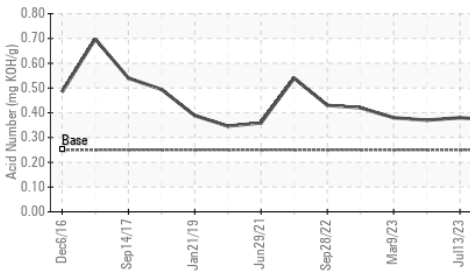
PQ



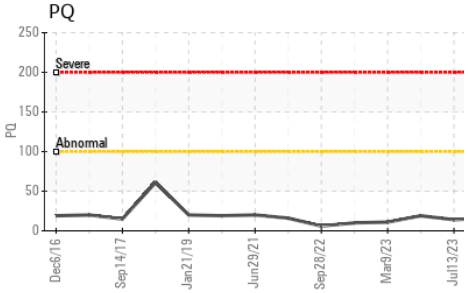
Particle Trend



Acid Number



PQ



FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**25.0**	26.4	26.6
Acid Number (AN)	mg KOH/g	ASTM D8045	0.25	**0.37**	0.38	0.37

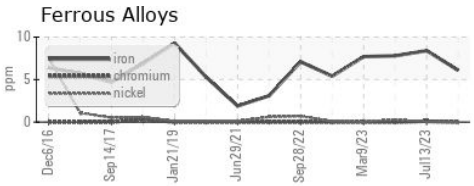
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	LIGHT	NONE
Sand/Dirt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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	220	▲ **174**	▲ 172	▲ 175

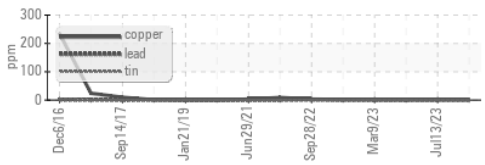
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

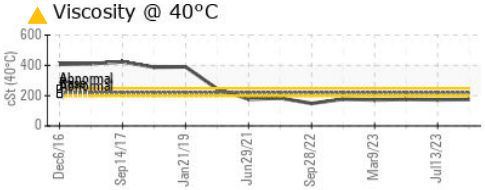
Ferrous Alloys



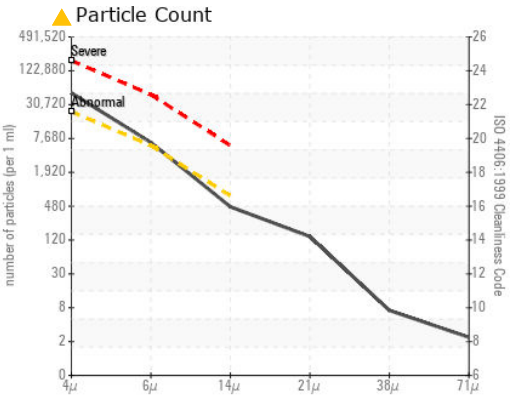
Non-ferrous Metals



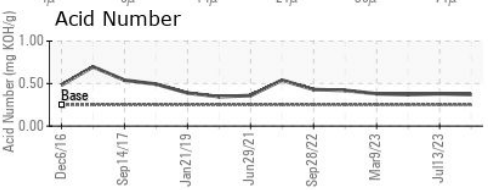
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLS0000745 **Received** : 27 Sep 2023
Lab Number : 05962832 **Diagnosed** : 02 Oct 2023
Unique Number : 10669383 **Diagnostician** : Mike Johnson
Test Package : IND 2 (Additional Tests: FT-IR, PQ, PrtCount)

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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