

OIL ANALYSIS REPORT

Sample Rating Trend



ALSTOM PC2021

Component Rear Left Gearbox Fluid TOTAL CARTER SH 220 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

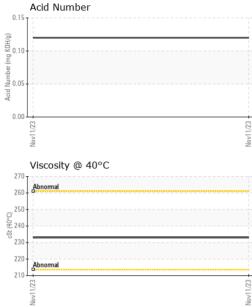
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

				Nov2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0798722		
Sample Date		Client Info		11 Nov 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	97		
Chromium	ppm	ASTM D5185m	>10	<1		
Nickel	ppm	ASTM D5185m	>10	<1		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m		0		
Aluminum	ppm	ASTM D5185m	>25	2		
Lead	ppm	ASTM D5185m	>50	2		
Copper	ppm	ASTM D5185m	>200	32		
Tin	ppm	ASTM D5185m	>10	<1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		<1		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<1		
Barium	ppm	ASTM D5185m		0		
Molybdenum	ppm	ASTM D5185m		<1		
Manganese	ppm	ASTM D5185m		2		
Magnesium	ppm	ASTM D5185m		0		
Calcium	ppm	ASTM D5185m		0		
Phosphorus	ppm	ASTM D5185m		184		
Zinc	ppm	ASTM D5185m		2		
Sulfur	ppm	ASTM D5185m		3386		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	16		
Sodium	ppm	ASTM D5185m		35		
Potassium	ppm	ASTM D5185m	>20	<1		
FLUID DEGRADA		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.12		



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VISUAL



	VISUAL		method	limit/base		history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
23	Sand/Dirt	scalar	*Visual	NONE	NONE		
Vov11/23	Appearance	scalar	*Visual	NORML	NORML		
No	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROPERT	IES	method	limit/base	current	history1	history2
	Visc @ 40°C	cSt	ASTM D445		233		
				1 <i>n</i>		11. A	
	SAMPLE IMAGES	5	method	limit/base	current	history1	history2
1/23	Color				no image	no image	no image
Nov11/23							
	Bottom				no image	no image	no image
	GRAPHS						
	Iron (ppm)				Lead (ppm)		
	600			20	Severe		
uda	400 - Abnormal			퉡 10)		
	200 0				Autointa		
	1/23				1/23		
	Nov11			Nov11/23	Nov1		
	_ Aluminum (ppm)				_ Chromium (pj	om)	
	100 Severe			3			
Ę	. 50			عام 2 ¹	Abnormal		
i.	Abnormal				1		
	10 13 10				1/23		
	ov11/			Nov11/23	0v11/		
	Z			Z			
	Copper (ppm)			15	Silicon (ppm)		
				10	0		
d d	400 - Abnormal			E 5) - Abnormal		
	0			<u></u>			
	v11/2			Nov11/23	Nov11/23		
	Nov1						
	Viscosity @ 40°C			(^D /HOX 0.1	Acid Number		
				1/23			
55 (40	250 - Abnormal			a 20.0			
	200			0.0 g N			
	Nov11/23			Nov11/23 Aci	Nov11/23		
	Nov			Nov	Nov		
Laboratory Sample No. Lab Number Unique Number E 12367 Test Package	: 06011599	01 Madis Received Diagnose Diagnosti	l :17 ed :21	ry, NC 2751 Nov 2023 Nov 2023 n Baldridge		REET NE, HIGH SPEE WAS Contact: MICH	HINGTON, D US 2001

Contact/Location: MICHAEL PORTER - AMTRAK