

COMMENTS

TIM: The only unusual find in this latest sample from your Z4M was lead, which jumped from zero to 10 ppm in this latest report. Lead could show bearing wear, but it might just be a temporary particle streak, and if that's the case, it should fall back down to average levels next time. Lead could also be from fuel blow-by, if you used some high-octane racing fuel at some point during this oil run. On the other hand, if you've noticed any oil pressure issues or other problems, this could be a sign of bearing wear, so we'll watch trends. The trace of fuel isn't an issue. Check back.

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	4,202	UNIT / LOCATION AVERAGES	3,760	3,950	3,825	5,000	UNIVERSAL AVERAGES
	MI/HR on Unit	25,913		21,711	17,951	14,377	10,500	
	Sample Date	06/18/13		11/11/12	05/26/12	08/27/11	11/2/2010	
	Make Up Oil Added	0 qts				0 qts	0 qts	
ALUMINUM	2	4	4	4	5	4	4	
CHROMIUM	0	0	0	0	0	0	0	
IRON	9	12	7	10	15	21	10	
COPPER	5	8	6	6	8	12	8	
LEAD	10	5	0	4	5	6	5	
TIN	0	1	0	0	0	2	1	
MOLYBDENUM	430	8	7	6	14	10	23	
NICKEL	0	0	0	0	0	1	1	
MANGANESE	1	1	1	1	1	2	2	
SILVER	0	0	0	0	0	0	0	
TITANIUM	0	0	0	0	0	0	1	
POTASSIUM	5	1	0	0	1	2	2	
BORON	88	94	109	95	104	82	89	
SILICON	8	5	3	5	6	9	5	
SODIUM	13	5	1	7	6	6	7	
CALCIUM	2624	1821	1850	1814	2115	1786	1707	
MAGNESIUM	261	603	621	611	587	562	518	
PHOSPHORUS	1474	1163	1563	1391	1178	834	843	
ZINC	1687	1318	1822	1545	1269	967	1010	
BARIUM	0	0	0	0	0	0	0	

Values Should Be*

SUS Viscosity @ 210°F	88.4	80-110	81.8	84.2	87.6	79.3
cSt Viscosity @ 100°C	17.60	15.5-22.9	15.98	16.56	17.40	15.34
Flashpoint in °F	390	>395	375	370	370	345
Fuel %	TR	<2.0	<0.5	<0.5	TR	1.0
Antifreeze %	0.0	0.0	0.0	0.0	0.0	0.0
Water %	0.0	<0.1	0.0	0.0	0.0	0.0
Insolubles %	0.3	<0.6	0.3	0.4	0.3	0.3
TBN						5.6
TAN						
ISO Code						

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

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