

## Report of the Month

The TSIO-550 engine in this Cirrus was struggling with chrome and nickel. They eventually figured out...what?

To learn more about where the elements are coming from, [click here](#).

	MIHR on Oil	45		55	50	51	30	25	UNIVERSAL AVERAGES
	MIHR on Unit	340	UNIT / LOCATION AVERAGES	295	251	240	58	25	
	Sample Date	2/13/2019		10/18/2018	7/13/2018	6/19/2018	6/5/2017	5/18/2017	
	Make Up Oil Added								
<b>ELEMENTS IN PARTS PER MILLION</b>	ALUMINUM	11	11	10	7	13	7	7	7
	CHROMIUM	46	32	36	35	43	47	34	25
	IRON	151	87	124	95	116	87	90	79
	COPPER	22	23	17	17	27	46	65	12
	LEAD	11588	9861	9853	5217	9664	7698	3414	7973
	TIN	2	2	4	1	4	2	4	2
	MOLYBDENUM	21	13	18	15	23	19	13	8
	NICKEL	59	28	35	28	35	11	12	29
	MANGANESE	2	2	2	1	2	2	4	1
	SILVER	0	0	0	0	0	0	0	0
	TITANIUM	2	1	1	1	1	0	0	1
	POTASSIUM	1	1	2	0	0	0	0	1
	BORON	1	1	1	1	2	1	1	1
	SILICON	7	9	7	7	8	17	20	8
	SODIUM	2	2	3	1	2	2	2	1
	CALCIUM	2	7	3	1	3	9	11	26
	MAGNESIUM	0	1	0	0	0	0	1	1
	PHOSPHORUS	1053	156	629	1051	770	9	61	251
	ZINC	7	18	6	4	7	30	98	6
	BARIUM	0	0	0	0	0	0	0	0

Values  
Should Be\*

<b>PROPERTIES</b>	SUS Viscosity @ 210°F	87.2	82-105	92.2	95.4	95.0	102.0	89.1
	cSt Viscosity @ 100°C	17.31	16.0-21.8	18.50	19.26	19.17	20.83	17.77
	Flashpoint In °F	435	>440	445	500	470	445	485
	Fuel %	TR	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5
	Antifreeze %	-		-	-	-	-	-
	Water %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Insolubles %	0.3	<0.6	0.3	0.4	0.4	0.3	0.6
	TBN							
	TAN							
	ISO Code							

After receiving this report, the owners took the aircraft in to check compressions and borescope the cylinders. Borescope and compressions were all okay. After removal of the starter adapter, they found it impossible to hand-turn. They believe the starter may have caused damage to the starter adapter, contributing to at least some of the elevated metal.