Mainlube Superior Maintenance Lubricants Pty Ltd

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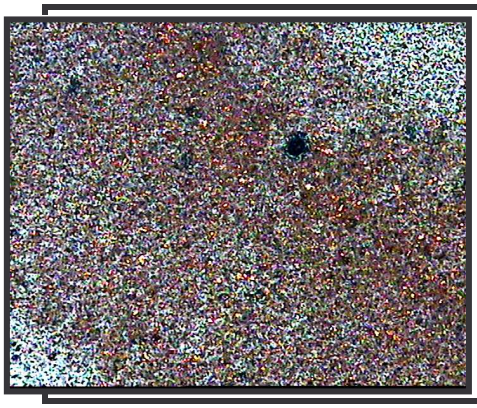
Wear Metal Analysis No 7087 Gentech Performance – T56

Attention; Hazza

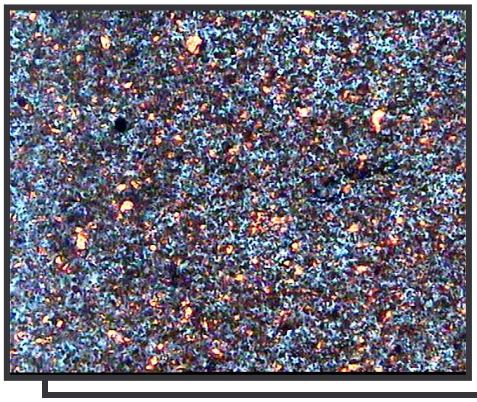
Objective. Check oil for Wear Metal Particles and any possible contamination, Information found used to establish machine condition and future maintenance requirements.

Method. Sample of approx 100 ml received from **T56 M6 Gearbox @ ??? Klms on oil, 100,000 Klms car, running ATF Fluid** . Sample preparation in accordance with Mainlube standard laboratory practices. One sample processed 1 ml in volume; therefore the amount seen in the video pictures is the actual debris concentration per ml of oil.

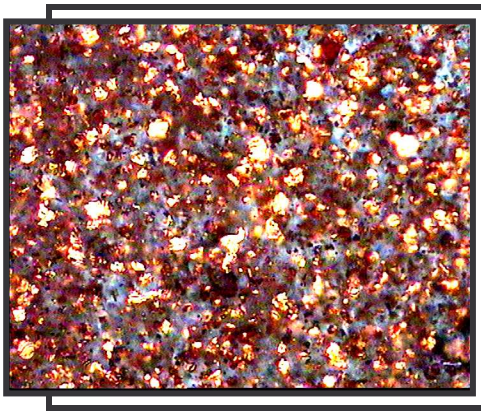


One mil. of the sample oil has been forced through a 13-mm diameter **0.3-micron membrane filter** @ 150 P.S.I. The membrane filter has caught any contaminates present, filters are glass slide mounted for examination.
This image represents a 1-mm diameter circle focused on the top layer of the filter @ **100X**. The green/blue coloured background is the microscopes bottom light shinning up through the glass slide illustrating density level of dirt, metal chunks and debris particles.

This image demonstrates the average debris level for sample No. 7087
To achieve an acceptable life from this application,
this image should be clear, no particles



Overview density of dirt,
Wear Metal Chunks and debris particles @ 200X.



Overview density of dirt,
Wear Metal Chunks and debris particles @ 500X.

Recommendations

This sample is contaminated with Scuffing Wear damaged surface, 3 Body Fatigue Wear, Laminar Wear and Organic Debris.

Scuffing Wear – “Damaged Surface” Particles began when a primary wear mode was generated and not addressed, 3 Body Fatigue wear is being forced through the load zone by the lubricant flow causing further damage by generating more 3 Body Fatigue wear and finally rolled out flat to form Laminar Wear Metal particles. Friction Polymers are formed when the lubricant is heavily stressed.

This contamination is causing damage to the machine and should be removed at the first opportunity.

Mainlube recommends that the gearbox flushed with Mainlube 245 Flush to assist with the debris removal. If after flushing there is a possibility that wear debris still remains, then repeat the process until they are both clean.

Replace the lubricant with Mainlube 154 Synthetic Solid Boundary E P Gear Oil SAE 75w90, run for 10 minutes and re-sample for benchmark.

Retest every 12 months until trends are established.

Steve Simmonds ATCAE
Managing Director.