

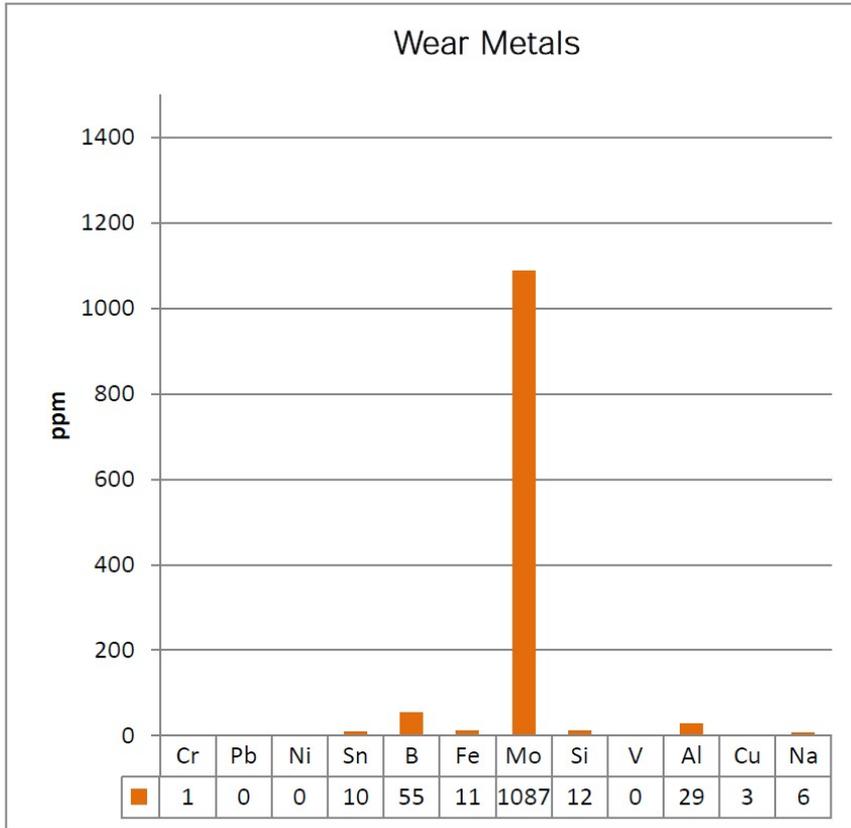
MILLERCARE SAMPLE ANALYSIS

Customer:
 Address: Poland
 Contact:
 Tel
 email

Oil Condition



Registration Number	ProbkA1
Vehicle Make	Ford Fiesta R5
Vehicle Model	
Oil Type	Engine oil
Product Name	CFS 5w40 NT+
Date of Sampling	07-Oct-20
Vehicle Mileage	
Mileage on this oil	
Lab Sample Number	39596
Date Received in Lab	12-Oct-20
Appearance	Dark Brown, Opaque
Density @ 15.5°C (g/ml)	0.863
Viscosity @ 100°C (cSt)	12.5 cSt
Viscosity @ 40°C (cSt)	
Calcium (%)	0.208
Zinc (%)	0.115
Sulphur (%)	
Phosphorus (%)	
TBN mgKOH/g	
Nitration	
Oxidation	
Water (ppm)	
Fuel Dilution (%)	2.0



Diagnostic/Action

Viscosity and density of the oil are still in grade. Fuel dilution is 2.0%, for a standard road car this would be at the caution level. No evidence of oxidation or nitration of the oil. Wear Metals at low levels, except Aluminium which is at the high end of expected levels. However, if non standard additions such as extra oil coolers are fitted may explain this. Overall comment is that there seems nothing unusual about this oil sample.

Report Date: 19/10/2020 Analyst: Andy Ogley

Comments are advisory only and based on information received

Source of Metals

Metal	Engine	Transmission	Gear	Hydraulic
Chrome (Cr)	Rings, Liners, Exhaust Valves, Shaft Plating, Stainless Steel Alloy	Roller Bearings	Roller Bearings	Shaft
Lead (Pb)	Main and Rod Bearings, Bushings, Lead Solder	Bushings (Bronze Alloy)	Bushings (Bronze Alloy)	Bushings (Bronze Alloy)
Nickel (Ni)	Valve Plating, Steel Alloy from Crankshaft, Camshaft	Steel Alloy from Roller Bearings and Shaft	Steel Alloy from Roller Bearings and Shaft	N/A
Tin (Sn)	Piston Flashing, Bearing Overlay, Bronze Alloy, Babbit Metal along with Copper and Lead	Bearing Cage Metal	Bearing Cage Metal, Lube Additive	N/A
Boron (B)	Additive, internal coolant leak, brake fluid contamination	N/A	N/A	N/A
Iron (Fe)	Cylinder Liners, Rings, Gears, Crankshaft, Camshaft, Valve Train, Oil Pump Gear, Gudgeon Pins	Gears, Disks, Housing, Bearings, Brake Bands, Shaft	Gears, Bearings, Shaft, Housing	Rods, Cylinders, Gears
Molybdenum (Mo)	Ring Plating, Lube Additive, Coolant Inhibitor	Lube Additive, Coolant Inhibitor	Lube Additive, Coolant Inhibitor, Grease Additive	Lube Additive, Coolant Inhibitor
Silicon (Si)	Dirt, Seals and Sealants, Coolant Inhibitor, Lube Additive (15 ppm or less)	Dirt, Seals and Sealants, Coolant Inhibitor, Lube Additive (15 ppm or less)	Dirt, Seals and Sealants, Coolant Inhibitor, Lube Additive (15 ppm or less)	Dirt, Seals and Sealants, Coolant Inhibitor, Lube Additive (15 ppm or less)
Vanadium (V)	From Heavy Bunker Type Diesel Fuels	N/A	N/A	N/A
Aluminum (Al)	Pistons, Thrust Bearings, Turbo Bearings, Main Bearings (Cat.)	Pumps, Thrust Washers	Pumps, Thrust Washers	Bearings, Thrust Plates
Copper (Cu)	Lube Coolers, Main and Rod Bearings, Bushings, Turbo Bearings, Lube Additive	Brushings, Clutch Plates (Auto / Powershift), Lube Collers	Bushings, Thrust Plates	Bushings, Thrust Plates, Lube Coolers
Sodium (Na)	Lube Additive, Coolant Inhibitor, Salt Water Contamination, Wash Detergents	Lube Additive, Coolant Inhibitor, Salt Water Contamination, Wash Detergents	Lube Additive, Salt Water Contamination, Airborne Contaminate	Lube Additive, Coolant Inhibitor, Salt Water Contamination, Airborne Contaminate
Calcium (Ca)	Detergent Dispersant Additive, Airborne Contaminant at some sites, Contaminant from Water	Detergent Dispersant Additive, Airborne Contaminant at some sites, Contaminant from Water	Detergent Dispersant Additive, Airborne Contaminant at some sites, Contaminant from Water	Detergent Dispersant Additive, Airborne Contaminant at some sites, Contaminant from Water
Zinc (Zn)	Anti-wear additives, brass alloys, galvanizing, bearings	Anti-wear additives, brass alloys, galvanizing, bearings	Anti-wear additives, brass alloys, galvanizing, bearings	Anti-wear additives, brass alloys, galvanizing, bearings