

### MILLERCARE SAMPLE ANALYSIS

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**Oil Condition**



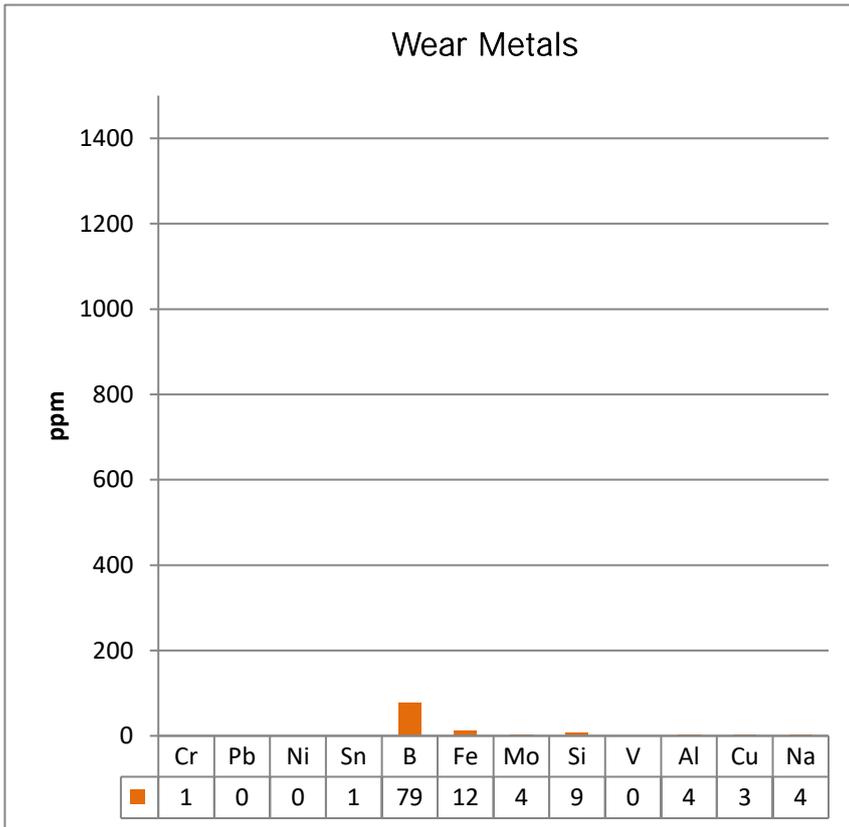
Registration Number: NH05 LEF  
 Vehicle Make: Renault  
 Vehicle Model: Clio  
 Oil Type: Engine oil

Product Name: 5w40 engine oil  
 Date of Sampling: 22-Jun-24  
 Vehicle Mileage: -  
 Mileage on this oil: ~1500

Lab Sample Number: 59027  
 Date Received in Lab: 01-Jul-24  
 Appearance: Brown, Clear  
 Density @ 15.5°C (g/ml): 0.832  
 Viscosity @ 100°C (cSt): 11.6  
 Viscosity @ 40°C (cSt):

Calcium (%): 0.141  
 Zinc (%): 0.097  
 Sulphur (%):  
 Phosphorus (%):

TBN mgKOH/g:  
 Nitration: n/a  
 Oxidation: n/a  
 Water (ppm):  
 Fuel Dilution (%):  
 Soot (%): 0.1



**Diagnostic/Action**

The viscosity is acceptable. Wear Metals are at a satisfactory level.

Report Date: 05/07/2024 Analyst: Mike Winn

Comments are advisory only and based on information received

# Source of Metals

<b>Metal</b>	<b>Engine</b>	<b>Transmission</b>	<b>Gear</b>	<b>Hydraulic</b>
<b>Chrome (Cr)</b>	Rings, Liners, Exhaust Valves, Shaft Plating, Stainless Steel Alloy	Roller Bearings	Roller Bearings	Shaft
<b>Lead (Pb)</b>	Main and Rod Bearings, Bushings, Lead Solder	Bushings (Bronze Alloy)	Bushings (Bronze Alloy)	Bushings (Bronze Alloy)
<b>Nickel (Ni)</b>	Valve Plating, Steel Alloy from Crankshaft, Camshaft	Steel Alloy from Roller Bearings and Shaft	Steel Alloy from Roller Bearings and Shaft	N/A
<b>Tin (Sn)</b>	Piston Flashing, Bearing Overlay, Bronze Alloy, Babbit Metal along with Copper and Lead	Bearing Cage Metal	Bearing Cage Metal, Lube Additive	N/A
<b>Boron (B)</b>	Additive, internal coolant leak, brake fluid contamination	N/A	N/A	N/A
<b>Iron (Fe)</b>	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
<b>Molybdenum (Mo)</b>	Ring Plating, Lube Additive, Coolant Inhibitor	Lube Additive, Coolant Inhibitor	Lube Additive, Coolant Inhibitor, Grease Additive	Lube Additive, Coolant Inhibitor
<b>Silicon (Si)</b>	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)
<b>Vanadium (V)</b>	From Heavy Bunker Type Diesel Fuels	N/A	N/A	N/A
<b>Aluminum (Al)</b>	Pistons, Thrust Bearings, Turbo Bearings, Main Bearings (Cat.)	Pumps, Thrust Washers	Pumps, Thrust Washers	Bearings, Thrust Plates
<b>Copper (Cu)</b>	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
<b>Sodium (Na)</b>	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
<b>Calcium (Ca)</b>	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
<b>Zinc (Zn)</b>	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