

"THE MAS"

2014 Maserati Quattroporte



VIN
ZAM56PPA6E1078338

DIST./TIME ON ENGINE
53,465 miles

DIST./TIME SINCE LAST OIL CHANGE
3,472 miles



Zengine Score Details

Your results indicate fuel is present in the oil. Fuel at low values can be due to a high amount of engine idle time. Fuel at higher levels can indicate a problem with fuel injectors, or worn engine components. This report should be reviewed with your mechanic as soon as possible. Continued operation of this vehicle with this level of fuel contamination will likely lead to catastrophic failure.



Contamination

Simply put, this is how much non-oil elements are in your oil. The main concern in this column is fuel dilution, we want to be really low.



Wear Metals

All the metal parts in the engine are moving and rubbing, the oil helps keep everything smooth. If it shows high amounts of metals, we suggest a professional take a look.



Lubricant & additives

This column provides an indication of the overall health of the oil. Poor oil health can easily lead to problems with the engine in terms of increased wear or excessive sludge build up.



Contamination index %	0.2
Silicon (Si) ppm	2
Sodium (Na) ppm	6
Potassium (K) ppm	1
Antimony (Sb) ppm	0
Manganese (Mn) ppm	0
Cadmium ppm	1
Water content %	0.00
Fuel Dilution %	7.5
Ethylene glycol %	0.0

Aluminium (Al) ppm	1
Iron (Fe) ppm	5
Chromium (Cr) ppm	0
Copper (Cu) ppm	2
Lead (Pb) ppm	0
Tin (Sn) ppm	0
Vanadium (V) ppm	0
Nickel (Ni) ppm	2
Silver (Ag) ppm	2
Titanium (Ti) ppm	0

Performance Rating	1
Dispersency	96
Viscosity 100°C cSt	8.2
Phosphorus (P) ppm	641
Zinc (Zn) ppm	745
Calcium (Ca) ppm	900
Barium (Ba) ppm	0
Magnesium (Mg) ppm	500
Molybdenum (Mo) ppm	60
Boron (B) ppm	110

User Name

Date sampled
10/13/2021

Date reported
12/07/2021

Sample number
10254365

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Understanding the tests

Viscosity

Viscosity is a measure of the resistance to flow at a certain temperature and is typically measured at 100°C on engine oils. A drop of the viscosity may indicate fuel dilution caused by blow-by, engine timing or injector problems. An increase in viscosity may indicate overheating, soot loading and/or oxidation caused by poor combustion or cooling. Changes in viscosity can also be due to product mixing or use of an improper fluid.

Water

All samples are screened for water on a hot plate. If the sample crackles, this is an indication that there is water present in the sample. Sources of water include the cooling system, condensation or other outside contamination.

Fuel Dilution

Fuel dilution is indicated by a low viscosity in combination with confirmation of fuel dilution by Gas Chromatograph (GC), FTIR or SETA Flash. Fuel dilution in an oil sample indicates an injector problem.

Elemental Analysis

Inductively Coupled Plasma technique (ICP) measured very small particles (<3µm) for a variety of elements that determine the presence of wear metals, additives and contaminants such as dirt or coolant. These elements are measured in parts per million (ppm). The significance and acceptable limits of the elements are dependant on the lubricant type, make and model and application. Below are potential sources for these elements.

Dispersancy

The property that allows oil to suspend and carry away pollutants of diverse sources such as soot from combustion, metallic particles from wear, corrosion of mechanical parts, and insoluble products resulting from the aging of the oil.

Performance Rating

DP is a calculated combined performance rating (overall note), which is helpful for monitoring the performance of the lubricant

Total Base Number

The Total Base Number (TBN) is the translation of the oil alkalinity. For a lubricant in use, too low a TBN means that the oil must be changed. The result must always be compared with the initial TBN of the oil. A significant change in the TBN value can be caused by several causes such as a consumption of additives or the contamination by another lubricant with a different TBN.

Glycol / Coolant

High levels of Sodium and Potassium are indicators that coolant is present in the sample. Coolant in the engine compartment indicates an internal water leak. This is a serious problem that can result in severe engine damage.

Element

Symbol

Possible sources

Aluminium	Al	Pistons, bearings, bushings, thrust washers, rings, cylinders, engine after-cooler, dust
Barium	Ba	Rust and oxidation inhibitor additive
Boron	B	Anti-corrosion additive in coolant, dust, water, oil additive
Calcium	Ca	Detergent/dispersant additive
Chromium	Cr	Piston rings, cylinder liners, valve, rods
Copper	Cu	Bearings, bushings, oil cooler
Iron	Fe	Bearings, shafts, cylinders, gears, piston rings
Lead	Pb	Bearings, bushings, anti-wear additive
Magnesium	Mg	Transmissions, detergent additive
Molybdenum	Mo	Piston rings, electric motors, oil additives
Nickel	Ni	Bearings, bushings, rings
Phosphorus	P	Anti-wear additive
Potassium	K	Coolant additive
Silicon	Si	Dust, dirt
Silver	Ag	Shafts and plating
Sodium	Na	Detergent or coolant additive, Salt
Tin	Sn	Bearings, bearing cages
Titanium	Ti	Bearing hub, coatings
Vanadium	V	Wear metal from alloys, coating, heavy fuel in marine applications
Zinc	Zn	Anti-wear additive

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