



# Oil Condition Monitoring Report



## Product Data Sheet from Shell LubeAnalyst

PDS#8.08.02

### LUBEKIT 8

#### INTRODUCTION

Shell's LubeAnalyst Oil Condition Monitoring Program is one of the most effective methods to avoid equipment damage and extend the life of your lubricant. LubeAnalyst sample packages have been designed to monitor the three main parameters of lubrication, which include: physical properties, contamination and wear.

**Lubekit 8** is best suited for regular oil analysis or when trying to determine oil drain intervals. This test is particularly useful for trending and monitoring system issues and is the most comprehensive sample test available for screening engine lubricant samples.

#### APPLICATIONS

Industry	Category	Component		
Industrial Equipment	Engine	Diesel Generator		
Road Transport	Engine	Diesel	Gasoline	
Marine	Engine	Trunk		
Mining	Engine	Diesel	Gasoline	Railway Diesel

For general guidelines regarding sample frequency visit <http://www.shell.ca/lubeanalyst>.

#### TEST METHODS

Test Category	Test Description	Test Method
Physical Properties	Kinematic Viscosity at 40°C and 100°C	ASTM D445-96
	Base Number	ASTM D2896-96
Contamination	ICP Spectroscopy	ASTM D5185-95
	Water, Crackle Test Method	Lab Method
	Fuel Contamination	ASTM D93-96
	Glycol Contamination	ASTM D 2982-93
	Soot	Lab Method
	Oxidation/Nitration	Lab Method
Wear	ICP Spectroscopy	ASTM D5185-95

## TEST DESCRIPTIONS

### ICP SPECTROMETRY

Inductively Coupled Plasma (ICP) Spectrometry detects and measures concentrations of wear metals, additives and contaminants. ICP Spectrometry measures the presence of 23 wear elements in parts per million (ppm).

### KINEMATIC VISCOSITY

Kinematic viscosity is the measure of the resistance of a fluid to flow under gravity. The test is run at industry specific temperatures of 40 and 100 degrees Celsius. Kinematic viscosity is measured in centistokes (cSt) or mm<sup>2</sup>/s.

### WATER, CRACKLE TEST METHOD

The crackle test method is a qualitative test used to determine the presence of water in a lubricant sample. The test is administered by taking a drop of the lubricant sample and placing it onto a hot plate to determine if water is present. The sample is observed for bubbling or spattering. Results are reported as Negative (N) or Positive (P).

### FUEL CONTAMINATION

Fuel contamination indicates the relative amount of unburned fuel present in the engine lubricant sample. Dilution of crankcase oils due to fuel presence can lead to high wear rates and premature fatigue. A flash tester is used to analyze the fuel level, which is reported as a percentage of volume.

### GLYCOL CONTAMINATION

A colour-metric test used to detect the percentage of ethylene glycol (antifreeze) present in crankcase oil; this test is designed specifically for engines. Positive test results indicate the presence of glycol, which often leads to lubricant breakdown, sludging, bearing wear and corrosion. Early detection is critical to prevent engine damage. Results are reported as Negative (N) or Positive (P).

### SOOT

The presence of soot within a lubricant sample is determined by a Fourier Transform Infrared (FTIR) scan. Soot detection is used in engine sample analysis. The total amount of carbon soot and other combustion related contamination is reported as a percentage of the oil volume. A high level of suspended solids will cause premature wear to engine components.

### OXIDATION/NITRATION

A Fourier Transform Infrared (FTIR) scan is used to determine chemical processes that lead to oil breakdown. Oxidation measures the overall breakdown of a lubricant due to aging, operating conditions or internal overheating. Nitration is formed when an excessive amount of oxygen is present and can form deposits in combustion areas and accelerate oxidation. This test is targeted toward engine samples and results are measured in absorption units per cm.

### BASE NUMBER

This test determines the lubricant sample's ability to counteract acid formation. The test is designed to monitor engine samples and defines the reserve alkalinity remaining in the lubricant sample. Decreases in base number may indicate a reduced acid neutralizing capacity or a depleted additive package. Base number is reported in mg KOH/g.

Visit your nearest Shell Associate or Reseller for more details.

Need more product information? Please contact the [Shell Customer Service Centre](#) at 1-800-661-1600 or e-mail us at [questions@shell.com](mailto:questions@shell.com)

MSDS requests? Please call 1-800-661-1600 or fax your request to (403) 691-3997

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