



The Petroleum Quality Institute of America

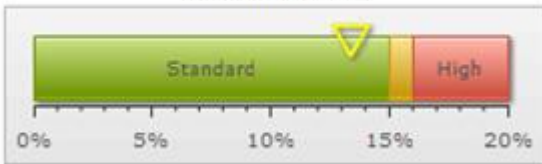
The independent resource for information and insights on the quality and performance of lubricants in the marketplace.



Noack Volatility

ASTM D5800 - Standard Test Method for Evaporation Loss of Lubricating Oils by the NOACK Method

Volatility, mass % loss, 1 hr, @ 250°C
(ASTM D5800)



Overview: Noack volatility determines the evaporative loss of engine oils. This test is important because the operating temperatures of an engine will typically drive off the lighter ends of a lubricant while in service. This effectively results in making the lubricant more viscous (thicker) which can lead to reduced fuel economy due to an increase in parasitic load. A lower number generally means less oil consumption due to

evaporation when the oil gets hot. Volatilities in the red zone are above the required limit for current API gasoline specifications.

ASTM D5800 - 08 Standard Test Method for Evaporation Loss of Lubricating Oils by the Noack Method

Noack volatility determines the evaporative loss of engine oils. This test is important because the operating temperatures of an engine will typically drive off the lighter ends of a lubricant while in service. This effectively results in increasing the viscosity of the lubricant to a more viscous (thicker) level and, as a result, fuel economy goes down due to an increase in parasitic load.

The evaporation loss is of particular importance in engine lubrication. Where high temperatures occur, portions of an oil can evaporate. Evaporation may contribute to oil consumption in an engine and can lead to a change in the properties of an oil. Oils failing to meet the volatility limits will struggle in many oxidation tests including the sequence IIIIG engine test which is a critical and sometimes formulation defining test. This test is impacted by many factors including the Noack volatility. Anti-oxidants can improve oxidation control but cannot prevent evaporation of the base stock leading to rapid oil thickening.

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