



Bulletin: 2008-003a
Date: June 2008
Dept: Marketing
Subject: Engine Oil Zinc Levels

LAB TESTED & STREET PROVEN

TECHNICAL INFORMATION BULLETIN

Hot Topic

The level of “zinc” in today’s engine oil is a hot topic among hands-on car enthusiasts. Whether in online chat rooms, blogs or message boards, or in the retail store, customers are seeking answers to make sure they are protecting their investment.

The following information will assist you with those conversations. An additional resource is available to you by calling the Valvoline Technical hotline at 1-800-TEAM VAL (1-800-832-6825).

What is zinc?

The anti-wear additive simply referred to as “zinc” by most car enthusiasts, is actually short for Zinc DialkylDithiophosphates or ZDP. As an anti-wear additive, its primary role is to prevent metal-to-metal contact between engine parts by forming a protective film. Despite being referred to as “zinc,” this additive actually contains zinc and phosphorus, with phosphorus performing the anti-wear function.

How zinc/phosphorus works

The zinc/phosphorus molecules react in the oil and release phosphorus-containing compounds that make a wear-resisting phosphate glass film on the critical surfaces of contacting engine parts. With most brands, this process also results in phosphorus being released with engine emissions into the catalytic converter, where it can poison the emissions system over time.

Why zinc/phosphorus level in engine oil has changed

With ever increasing limits on emissions, automobile manufacturers have tightened emission control systems on newer vehicles. This is one of several factors considered when the American Petroleum Institute (API) sets standards for engine oil.

The current API standard is “SM,” which replaced the previous “SL” classification. Because phosphorus can poison a vehicle’s emission system, the level of zinc is lower for current engine oil.



The controversy



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Many hands-on car enthusiasts and engine experts believe the lower levels of zinc in “SM” engine oil is causing excessive wear in older style push-rod and flat tappet engines. This is despite the fact that all new engine oil classifications are intended to be backward compatible. This has resulted in the widely accepted belief that modern engine oil is not adequate to protect older engines.


Consumer Solutions

There are high-zinc engine oils available to meet this need. It is important to note, however, that the entire additive package still needs to be balanced for best performance. For example, engine oil with a high zinc level but low detergent may not perform over a drain interval of 3,000 miles or longer.

Valvoline offers two solutions to the zinc issue

 **Valvoline Racing VR1:** 75% higher zinc than SM engine oil with a balanced additive package designed to work in both racing and street-legal applications. This product will protect older style push-rod and flat tappet engines. Valvoline provides this product in both multi and mono viscosity grades: SAE 20W-50 (part vv211), straight SAE 50 (part vv235), SAE 10W-30 (part vv205), SAE 30 (part vv223), SAE 40 (part vv229), and SAE 60 (part vv241)



 **Longer-Lasting Zinc/Phosphorus:** Valvoline uses an advanced zinc/phosphorus additive that keeps higher levels of phosphorus in the engine oil where it protects the engine, instead of poisoning the catalytic converter. Valvoline is the only brand offering this unique additive across its entire line of passenger car engine oils, including **SynPower** which is the only synthetic offering this additive. www.valvoline.com