

In an effort to extend the life of catalytic converters the EPA and the OEM engine manufacturers have instructed the motor oil companies to reduce the levels of ZDDP (zinc dialkyldithiophosphate) in the oil. The ZDDP when present in the exhaust gas can coat the catalyst which results in higher emissions and shortens the service life of the catalytic converter. This reduced ZDDP approach works well to protect the catalytic converters but leaves many older and high performance engines without the proper EP (extreme pressure) wear protection they need to protect the cams, lifters and rocker arms. **Virtually all non-roller cam design engines are at risk for significant wear problems.**

Hy-Per Lube Zinc Replacement Additive contains an exclusive Polymer Ester formula, when added to any motor oil, including the new SM rated oils, will provide up to TWICE the EP wear protection as high content ZDDP motor oils and is also safe for use in all engines even those with catalytic converters. **Hy-Per Lube Zinc Replacement Additive will provide maximum wear protection for cams & lifters in flat tappet cam design engines.**

- Provides superior anti-wear protection even when added to oils containing reduced ZDDP levels.
- Maintains a strong oil film at high temperatures.
- Reduces cold start wear after long periods of shut down.
- Environmentally Safe, contains no heavy metals and will not harm emission controls or catalytic converters.
- Does not contain Zinc or Phosphorous
- Compatible with all motor oils including synthetic.
- One 12 oz. bottle treats a 4-6 qt. capacity system. Use with every oil change.



Stock No. HPZ212

Hy-Per Lube **ZINC** Replacement Additive

Independent Lab Tests Prove That it Protects Better Than Zinc

Sequence IV-A Test Results of HPL-ZRA in a low ZDDP (500 ppm) engine oil versus high Phosphorus engine oil

SCUFFING AREA ON ROCKER ARM PADS (ave.%)

INTAKE	High ZDDP	62.2
	Low ZDDP with HPL	28
EXHAUST	High ZDDP	58.5
	Low ZDDP with HPL	24

WEAR OF CAM LOBES (um)

INTAKE	High ZDDP	35
	HPL	19
EXHAUST	High ZDDP	29
	HPL	14.8

VW Cam & Tappet Test Failure @ 74 um	Avg. Cam Wear (um)	Max. Cam Wear (um)
10w-40 API SH (1100 ppm ZDDP)	52	72
10w-40 API (500 ppm ZDDP)	86 (Fail)	120 (Fail)
10w-40 API (500 ppm ZDDP) WITH HPL-ZRA	35	42
Nissan KA 24E Valve Train Wear 10w-40 API SH (1100 ppm ZDDP)	Without HPL-ZRA	With HPL-ZRA
Rocker Arm Scuffing	62.2%	13.40%
Rocker Arm Wear	4.0 um	2.0 um
Cam Lobe Wear	34.5 um	5.2 um