High performance engines require coolant to transfer as much heat as possible. As cylinder head temperatures increase, so does the likelihood of detonation and power loss unless ignition timing is retarded. Under extreme conditions, this can also result in overheating and engine damage.

Hy-Per Lube Super Coolant reduces the surface tension of coolant, allowing it to more deeply penetrate metal surfaces at critical heat transfer areas inside the engine and radiator. This results in more heat being transferred away from cylinder heads and a reduction in engine operating temperatures.

Importantly, cooler cylinder head temperatures also allow the engine ECU to safely advance ignition timing, which results in more horsepower.

Street applications running a 50/50 mix will run 6-8º F cooler, and racing applications running straight water will run up to 25º F cooler. Actual cylinder head temperatures can be reduced by up to 50º F.

Use in Cars, Trucks, Motorcycles, R.V.’s, Towing, Racing and Street Cooling Systems

- Reduces engine cylinder heat temperatures
- Allows safe advancement of ignition timing resulting in more horsepower
- Prevents overheating in high performance and high load engines
- Complete protection from rust, corrosion, electrolysis and coolant gelling
- Quicker engine warm-up during cold winter conditions
- One 16 oz bottle treats 12-20 quart cooling systems
- Works with all OEM types/colors of antifreeze and water
- Formulated to protect aluminum systems

Dryo Test Results

Independent Dyno Tests Prove That Hy-Per Lube Diesel Super Coolant Reduces Engine Temperatures By Up To 25º F

<table>
<thead>
<tr>
<th>Antifreeze Mix</th>
<th>Temperature (ºF)</th>
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<tbody>
<tr>
<td>50% Antifreeze/50% Water</td>
<td>230</td>
</tr>
<tr>
<td>50/50 Mix + SUPER COOLANT</td>
<td>222</td>
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<tr>
<td>Water Only</td>
<td>219</td>
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<td>Water + SUPER COOLANT</td>
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Also Provides Quicker Engine Warm-Up During the Winter

- Improves Heat Transfer of Diesel Radiators and Intercoolers
- Lower Temperatures Improve Fuel Economy and Torque
- Provides Complete Protection From Cavitation, Corrosion and Electrolysis

Hy-Per Lube Diesel Super Coolant is specifically formulated to improve the cooling ability of Hi-Performance turbocharged, intercooled diesel engines. The extra heat developed by turbochargers, and the addition of EGR coolers and oil coolers, places extremely heavy demands on diesel engine coolant. Hy-Per Lube Diesel Super Coolant enhances coolant heat transfer, and reduces coolant temperatures, providing significant performance improvement. Dyno testing has shown an average temperature drop of 5 degrees in systems with 50/50 antifreeze. Systems running 100% water coolant with Hy-Per Lube Diesel Super Coolant have seen a 9 degree average temperature reduction. Lower temperatures enhance the efficiency of turbochargers, and provide better performance. This results in average fuel economy increases of 1-2%, and torque increases of 2-3%.

Also Provides Quicker Engine Warm-Up During the Winter

- 30º F to 120º F Warm-up without Super Coolant: 11.7 min.
- 30º F to 120º F Warm-up w/Super Coolant: 9.8 min.
- 30º F to 180º F Warm-up without Super Coolant: 18.8 min.
- 30º F to 180º F Warm-up w/Super Coolant: 16.1 min.

High performance engines require coolant to transfer as much heat as possible. As cylinder head temperatures increase, so does the likelihood of detonation and power loss unless ignition timing is retarded. Under extreme conditions, this can also result in overheating and engine damage.

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Super Coolant also provides a unique benefit for colder climates – quicker engine warm-ups!

Hy-Per Lube Super Coolant provides complete protection from rust, corrosion, and electrolysis. This is particularly important in straight water applications where there is no corrosion protection being provided by the corrosion inhibitors in antifreeze.
1. Increases Film Strength: Over 75% of engine wear occurs during the first few seconds of starting your engine. This is called dry or cold start wear. Hy-Per Lube provides complete protection against start-up wear by leaving a protective lubricant film on all internal engine parts, even if your engine has not been running for long periods of time.

2. High Mileage: When used in high mileage engines, Hy-Per Lube will help restore performance and improve fuel economy by better sealing piston rings and valve guides. Compression is restored, oil consumption and exhaust smoke is reduced.

3. Improves Viscosity and Prevents Thermal Breakdown: Hy-Per Lube provides added protection between oil changes and will extend the life of your oil by up to 50%. When used under normal driving conditions you can extend your drain intervals up to a total of 7500 miles.

4. Reduces Temperature: All lubricants will foam. Foam traps heat in the oil which increases operating temperatures leading to premature wear and equipment failure. Hy-Per Lube reduces foam and helps extend the life of your engine and also reduces gearbox and transmission temperatures.

5. Quiets Engine Noise: Hy-Per Lube is an extreme pressure lubricant which greatly enhances your oil’s ability to cushion and absorb mechanical shock. Hy-Per Lube will reduce lifter and drive train noise.

   • Provides superior 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

ZINC REPLACEMENT ADDITIVE

Hy-Per Lube Zinc Replacement Additive will provide maximum wear protection for cams and lifters in flat tappet cam design engines

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 designed engines are at risk for significant wear problems.

Hy-Per Lube Zinc Replacement Additive contains an exclusive polymer ester formula which when added to any motor oil, including the new SN 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.

Independent Lab Tests Prove Hy-Per Lube Zinc Replacement Additive Protects Better Than High Zinc Content Oils

Test Results comparing Hy-Per Lube Zinc Replacement Additive in a low ZDDP (500 ppm) motor oil versus a high ZDDP (1100 ppm) content motor oil without Hy-Per Lube Zinc Replacement Additive.

The lower the number in each test reflects lower wear. You can see that Hy-Per Lube Zinc Replacement Additive cuts wear in half in all the industry standard valve train wear tests shown below.

**SCUFFING AREA ON ROCKER ARM PADS (AVE. %)**

<table>
<thead>
<tr>
<th></th>
<th>High ZDDP</th>
<th>Low ZDDP with HPL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTAKE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>62.2</td>
<td>28</td>
</tr>
<tr>
<td><strong>EXHAUST</strong></td>
<td>High ZDDP</td>
<td>Low ZDDP with HPL</td>
</tr>
<tr>
<td></td>
<td>58.5</td>
<td>24</td>
</tr>
</tbody>
</table>

**WEAR OF CAM LOBES (um)**

<table>
<thead>
<tr>
<th></th>
<th>High ZDDP</th>
<th>Low ZDDP with HPL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTAKE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>14.8</td>
</tr>
<tr>
<td><strong>EXHAUST</strong></td>
<td>High ZDDP</td>
<td>Low ZDDP with HPL</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>14.8</td>
</tr>
</tbody>
</table>

**VW Cam & Tappet Test**

Failure @ 74 um

<table>
<thead>
<tr>
<th></th>
<th>Avg. Cam Wear (um)</th>
<th>Max. Cam Wear (um)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10w-40 API SH (1100 ppm ZDDP)</td>
<td>52</td>
<td>72</td>
</tr>
<tr>
<td>10w-40 API (500 ppm ZDDP)</td>
<td>86 (Fail)</td>
<td>120 (Fail)</td>
</tr>
<tr>
<td>10w-40 API (500 ppm ZDDP) WITH HPL-ZRA</td>
<td>35</td>
<td>42</td>
</tr>
</tbody>
</table>

Nissan KA 24E Valve Train Wear

<table>
<thead>
<tr>
<th></th>
<th>Without HPL-ZRA</th>
<th>With HPL-ZRA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocker Arm Scuffing</td>
<td>62.2%</td>
<td>13.40%</td>
</tr>
<tr>
<td>Rocker Arm Wear</td>
<td>4.0 um</td>
<td>2.0 um</td>
</tr>
<tr>
<td>Cam Lobe Wear</td>
<td>34.5 um</td>
<td>5.2 um</td>
</tr>
</tbody>
</table>

Hy-Per Lube Zinc Replacement Additive will provide maximum wear protection for cams and lifters in flat tappet cam design engines

Hy-Per Lube Zinc Replacement Additive

Zinc Replacement Additive

Don’t just stabilize your oil...improve it 5 ways with Hy-Per Lube Oil Supplement

1. Increases Film Strength: Over 75% of engine wear occurs during the first few seconds of starting your engine. This is called dry or cold start wear. Hy-Per Lube provides complete protection against start-up wear by leaving a protective lubricant film on all internal engine parts, even if your engine has not been running for long periods of time.

2. High Mileage: When used in high mileage engines, Hy-Per Lube will help restore performance and improve fuel economy by better sealing piston rings and valve guides. Compression is restored, oil consumption and exhaust smoke is reduced.

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