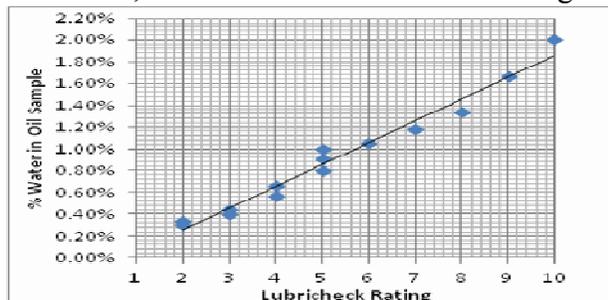


Winter Water in your oil

“Winter Water” in Your Engine Oil? -- Why You Need to Know

Water collects in motor oil during cold winter months, and can convert into highly corrosive sulfuric acid. To detect acid and other contaminants, WaveOn Technologies developed Lubricheck, the world's first affordable oil testing gadget, capable of detecting as little as 0.3% water, and safely permitting extended oil changes.

Water naturally condenses inside an engine from combustion, and when moist air is drawn in and contacts cool surfaces. Typically, after a few minutes, this potentially damaging water quickly boils away when the engine reaches normal operating temperatures of about 212F (100C). However, during frigid winter months, it can be a very different story. Engines may rarely get up to full operating temperature during short trips, stop-and-go traffic, and long idling. Under these conditions, this 'winter water' can reach dangerous levels.



Running the engine mixes the condensed water into the oil. Depending on the amount of water, this oil/water mixture may not provide the lubrication and corrosion resistance needed to prevent engine damage. And, if that is not bad enough, when combustion gases combine with water, sulfuric acid is produced. To eliminate this home grown acid, oil manufacturers add neutralizing chemicals to their oil. But, winter driving conditions produce acid at a rapid rate, potentially depleting additives before the next planned oil change.

When the oil additives are gone, the acidity of the oil rises, and the pH drops. Acidic oil is particularly corrosive to the relatively soft bearing materials used at many critical points in an engine. Detecting either water or acid in motor oil has historically meant mailing a sample to an

TECH TIP



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oil lab for a \$30 to \$50 analysis. Results can take several days. But, now there is a new, instant and inexpensive option.

The [Lubricheck](#) Oil Tester is an inexpensive, compact, digital device recently introduced by WaveOn Technologies. For under \$50, this reusable, pocket sized gadget empowers any motorist to instantly determine the oil condition in gas or diesel engines. And it is particularly sensitive to water, reacting to as little as 0.3% water content, (approx. 20 drops) per quart of oil. (See attached graph)

The benefits of regular Lubricheck testing:

- .Determine if oil is degrading too fast
- .Detect metal particles, water, acid, antifreeze and dirt
- .Potentially catch engine problems before expensive damage occurs
- .Help motorists safely extend oil change intervals
- .Reduce wasted oil to conserve non-renewable resources

With 5 to 7 drops of motor oil placed on the Lubricheck sensor ([see demo video](#)), anyone can now instantly know the condition of their oil. If there is a serious problem due to metal particles, water, antifreeze, acid, carbon, dirt or (perish the thought!) all of the above, the Lubricheck will warn the user with a rapid flashing #10 LED. (With such a reading, it may be wise to send a sample to an oil lab for full analysis.)