

General Questions

Where are Evans coolants available?

Evans waterless coolants are available through dealers and distributors across the United States and internationally. Which automotive coolants are water-based?

All other commercially available automotive coolants are water-based, or meant to be diluted with water. Evans is the only manufacturer of waterless engine coolant. All Evans coolants are waterless.

Which Evans product should I use for my vehicle?

High Performance Waterless Engine Coolant: For cars, and light duty trucks. Also for use in boats, light aircraft, light duty diesels, LP and CNG engines.

Heavy Duty Waterless Engine Coolant: For all heavy duty applications such as class 8 trucks, generators, and offhighway equipment.

Waterless Powersports Coolant: For use in motorcycles, ATV's, snowmobiles, and other off-road powersports applications.

NPG Waterless Engine Coolant: For racing venues that allow propylene glycol based coolants, but not ethylene glycol based coolants. Not for general use. Adaptive equipment may be needed for specific high performance applications. Call Evans Cooling Systems for further specifics regarding use of NPG.

Prep Fluid: Used as a waterless flush to remove remaining water-based coolant from the cooling system prior to installing Evans waterless coolant. Prep fluid is 100% compatible with all Evans waterless coolants.

Will using Evans Waterless Coolant void my warranty?

Some vehicle manufacturers may not yet recommend or endorse the use of Evans waterless coolant. However, you are protected by the [Magnuson-Moss Warranty Act](#). Evans Cooling Systems provides its own warranty, which covers any damages that occur as a result of using the coolant. For how long is Evans waterless coolants warrantied?

Evans Cooling Systems Inc. (ECS) warrants its products to be free from material defects under normal use for a period of two years from the date of purchase.

Properties

What is the flash point of Evans coolant?

The flash point (the lowest temperature at which a combustible substance produces sufficient vapor near its surface to generate an ignitable mixture with air) of Evans waterless coolant is similar to that of conventional water-based coolant, i.e., 248 °F/120°C.

Over time, will Evans coolant absorb water?

Evans waterless coolant is hygroscopic, which means it has the ability to absorb moisture. As such, containers of unused coolant should be kept tightly closed. In the cooling system, Evans waterless coolant should not absorb a significant amount of moisture from the atmosphere as long as a

conventional pressure cap is used. Under normal circumstances, the cap should not open, allowing air to enter the system.

Installation

How do I install Evans waterless coolant in my vehicle?

The conversion process is not complicated but should be done thoroughly and according to written instructions.

Basic Installation Procedure:

1. Drain all old water-based coolant out from radiator, block, and heater core if accessible.
2. Use high volume air to force out remaining coolant
3. Fill with Evans Prep Fluid (waterless flush) and run for 15 minutes to circulate.
4. Allow to cool and drain out Prep Fluid in same manner as old water-based coolant.
5. Fill with Evans Waterless Coolant and run for 15 minutes to circulate. Top off as necessary.
6. Test for water content to confirm less than 3% water. Water content can be measured with a refractometer or a sample can be sent to Evans for testing.

Do I really need to use Prep Fluid?

Evans recommends using Prep Fluid for all installations to ensure removal of all remaining water-based coolant from the cooling system before installing Evans waterless coolant. In a new or “dry” engine, it is not necessary to use Prep Fluid.

How will I measure water content after installation of Evans waterless coolant?

A refractometer can be used to measure the final water content after conversion to Evans waterless coolant and uses a Brix scale. Refractometers are most commonly used by fleets or conversion facilities where installations are regularly performed.

What happens if I have water in my cooling systems after installing Evans coolant?

It is important to closely follow directions during the initial Evans waterless coolant installation. A water content higher than 3% will lower the boiling point, and may reduce the corrosion and pump cavitation protection of Evans waterless coolant. If a water test shows there is between 3% and 5% water in the coolant, the corrective action is to drain half of the system volume and add back new Evans waterless coolant. This will reduce the water content to an acceptable range. If the measured water content is greater than 5%, the system must be drained and refilled with new Evans waterless coolant.

Do I need to change my radiator cap when using Evans coolant?

A different radiator/pressure cap is not required with Evans waterless coolant. A water-based coolant generally requires anywhere from a 7 to 15 psig pressure cap. Higher pressure raises the boiling point of water-based coolant. Evans waterless coolant expands slightly as it warms, creating pressure of 3–5 psig, and the existing cap does not need to be changed.

Operation

Does Evans coolant require periodic maintenance?

No periodic addition of supplemental coolant additives is required, nor should any ever be added. Evans recommends inspecting the cooling system at least once a year to ensure that no contamination of the coolant has occurred.

If I have a leak or other event where I need to top off or refill my coolant and Evans is not immediately available, what can I safely add to the cooling system?

With Evans waterless coolant, the likelihood of coolant loss and the need for topping up are greatly reduced. In the event that there is significant coolant loss from the system during operation and no Evans waterless coolant is available to fill the system, water or water-based coolant may be used. However, repairs should be made as soon as possible, and the system should be drained, purged and re-filled with Evans waterless coolant.

What if I am using Evans waterless coolant and I get a leak?

Leaks should be repaired. Stop-leak type products are not intended to be permanent repairs, but they may be used as a temporary measure. Carefully follow the instructions on the stop leak product label. Overuse may clog radiator and heater core passageways.

What effect will mixing Evans coolant with water or water-based coolant have on my cooling system?

In the short term, no performance issues should result from mixing a small amount of conventional coolant or straight water with Evans waterless coolant. However, the high boiling point and corrosion protection of Evans waterless coolant will be reduced, and the coolant should be replaced as soon as possible.

How do Evans waterless coolants control engine metal temperatures as compared to water-based coolants under stressed conditions?

Water-based coolant boils at a temperature only slightly higher than the operating temperature of the coolant. The boiling point of water-based coolant is somewhat above the boiling point of water for the pressure of the system. Localized boiling releases water vapor that can only condense into coolant that is colder than the boiling point of water. Any vapor that doesn't condense occupies a volume that displaces liquid coolant. Water vapor is a very poor conductor of heat. Hot engine metal, insulated by water vapor, becomes an engine "hot spot" that can cause pre ignition and detonation. In contrast, the boiling point of Evans waterless coolant is much higher than the bulk coolant temperature and any locally generated vapor condenses immediately into the surrounding bulk coolant. There is no persistent vapor to insulate between hot metal and the liquid coolant. Liquid coolant is in contact with all of the coolant jacket at all times, providing a path of excellent heat transfer away from the hot metal.

How does Evans coolant prevent after-boil?

After-boil occurs in an automotive engine after engine shutdown when the heat in the system cannot be rejected to the air because the coolant is no longer being circulated to the radiator. A coolant near its boiling point will not be able to absorb additional heat without boiling and being forced out through the pressure cap. Conversely, the huge separation between the operating temperature and the boiling point of Evans waterless coolant enables the coolant to act as a heat sink into which heat from hot metal parts of the system can be readily dissipated. Boiling is avoided and there is no build-up of pressure to force coolant out of the system. Stresses on cooling system components are avoided because metal temperatures are kept under control. How does Evans coolant prevent water pump cavitation?

Evans waterless coolant inhibits vapor development in the pump over a broad range of temperatures. With Evans waterless coolant, the suction side of the coolant pump is never at a low enough pressure to flash vaporize the coolant. So, the pump never gets vapor-bound and has the ability to pump coolant over broad range of temperatures. No vapor bubbles are formed to collapse against the metal and cause cavitation erosion damage to the pump. Will Evans coolant lower the operating temperature of my engine?

Typically no. Vehicles running under normal operating conditions should show either no change or a slight increase in temperature, but that will depend on cooling system configuration as well as driving conditions. In high horsepower applications, the temperature effect of running Evans waterless coolant will depend on the engine and cooling system components. Certain systems that use incompatible components, have an existing problem, or are poorly designed could run hotter.

Is Evans advocating operating engines at higher temperatures?

Not really. With Evans waterless coolant, operating temperatures may be modestly higher than those of water-based coolant, depending on driving conditions and whether the vehicle is stock or configured as high-performance. When the engine is stressed, the coolant absorbs more heat and temperatures rise. This is not a concern when using Evans waterless coolant. The combination of the high boiling point of Evans waterless coolant and a correctly-sized cooling system means that an increase in temperature can be accommodated without cooling system failure.

If I increase my engine horsepower and want additional cooling capacity, what suggestions do you have for radiators?

In general, Evans recommends single-pass radiators as they have less flow resistance than multi-pass radiators. The following are minimum radiator core suggestions:

- 300HP or less without AC.....4 rows: ½" tube copper/brass
- 300HP to 400HP with AC.....2 rows: 1" tube aluminum
- 400HP to 600HP.....2 rows: 1.25" tube, aluminum
- 600HP and above.....3 rows: 1" tube aluminum
- OR 2 rows: 1.5" tube aluminum