



When a conventional engine coolant just isn't enough.

When it comes to boiling it is true that it is not desirable to have this occur in the radiator. The radiator's job is to cool the liquid while the liquid's task is to cool the engine. If the radiator of an engine is boiling over it means the coolant is becoming superheated and turning to a vapor. When it re-condensed it contained too much heat for the radiator to dissipate.

It needs to be recognized that the load on the cooling system and the coolant itself is not the same under all driving conditions. At idle and light load such as cruising down a highway the engine is not required to produce much power. The amount of power required to move a vehicle at 100 km/h is only a fraction of what the engine can produce at maximum output. On the average an older car only requires 25 to 30 horsepower to cruise on level ground at 100 km/hr. Since an internal combustion engine is nothing more than a heat pump, the thermal load the liquid coolant and the radiator are exposed too is proportional to the heat of the power produced. If the same vehicle is asked to climb a long grade at a steep angle, pull a trailer, or produce maximum power for passing or racing, then the load on the coolant and radiator increases.

A coolant must work to meet the transient needs of the engine. Many falsely believe that water is the best coolant. That would be true if the engine was going to do nothing but idle or never produce anywhere near maximum power during its lifetime. With its specific heat rating and good thermal conductivity qualities, water does an excellent job of cooling an engine -- that is until the load is increased and the coolant starts to boil in the cylinder head. Never mind the fact that water creates rust and vapor pressure that insulates the liquid from the water passages, diminishing thermal transfer in the engine and radiator. When this happens in the engine, the water would stay cooler since there is less heat rejected into it but the metal surface temperature of the cylinder head would be much higher. In addition, water offers no lubrication properties for the pumping mechanism (water pump) and will freeze.

As the coolant is asked to work harder boiling occurs in the cylinder head water jacket. Thus, conventional engine coolant can actually wear out. This is a result of the additive package becoming neutralized and consumed from the high temperatures and constant phase change that is occurring. If traditional conventional coolants are used they need to be changed on a regular basis. In severe usage such as racing or towing the coolant would need to be changed much more frequently.

Evans Waterless Engine Coolants are lifetime coolants and have a boiling point of 190 degrees C at atmospheric pressure. This allows the coolant to remove more heat from the cylinder head and limit heat related detonation. It also eliminates all water along with the possibility of corrosion or cylinder liner pitting in wet sleeved race engines. Collector cars that are hardly used will benefit from the lack of corrosion from the absence of water with the Evans product.

When choosing a coolant for an engine you need to consider the worst case conditions, not idle or light load. Traditional coolants are inferior when the load or horsepower increases. That is where the Evans product shines, allowing for better protection and a more aggressive tune-up.