



This fuel news identifies what vapour lock is and what general causes of this are.

WHY DO SO MANY CARS HAVE THEIR BONNETS OPEN ON HOT DAYS?

Power loss, rough running, stalling and difficult starting when the engine is hot can result from excessive vapour formation in your engine's fuel system. In extreme cases the car just stops.

The cause is evaporation of some of the more volatile components of the petrol. Bubbles of vapour from in the fuel system can prevent the easy flow of fuel. This is called vapour lock.

VAPOUR LOCK IS A SYMPTOM OF EXCESSIVE VAPOUR FORMATION

The engine will stop because it is not receiving enough fuel. It will not restart until cooled and the fuel can flow again. Opening the bonnet or pouring water over the fuel pump to cool the fuel can sometimes assist in overcoming the vapour lock.

Vehicle design is an important factor; some models will be affected while others are not. Fuel formulation is also important; some fuels will start to vaporise readily while others do not. A third major factor is ambient temperature; fuel will vaporise more readily on a hot day than on a cool day.

GOOD EVAPORATION OF FUEL IS ESSENTIAL FOR EASY STARTING AND SMOOTH DRIVING WHEN COLD

In cold seasons petrol is blended to vaporise easily in the carburettor and inlet system of the engine. As the weather warms, petrol that vaporises too easily will form vapour in the fuel system. For this reason petrol is blended so that the tendency to form vapour (volatility) is less in summer than in winter.

SUMMER VOLATILITY IS A COMPROMISE BETWEEN COLD STARTING AND VAPOUR LOCK

In summer there is a conflict between the requirements for cold starting and hot engine motoring, because the temperature range of a summer day is greater than in winter. Therefore, a fuel that gives adequate cold engine operation may vapour lock on extremely hot days.

FVI IS THE SPECIFICATION POINT THAT CONTROLS VAPOUR LOCK

FVI (Flexible Volatility Index) is a calculated number derived from distillation characteristics and the Reid Vapour Pressure (RVP). Extensive road testing has shown that FVI can predict a fuel's vapour locking tendency over the range of ambient temperatures experienced throughout Australia.

Therefore BP specifications include a monthly FVI suitable for each supply point throughout Australia. This ensures BP fuel, as marketed, will give satisfactory operation for the majority of cars in every area throughout the year. Of course, this will not prevent sensitive cars suffering from vapour lock when the weather is unusually hot.

**For further information, please call the BP Lubricants and Fuel
Technical Helpline 1300 139 700 local call
or visit www.bp.com.au/fuelnews**