



Diesel Engines – Preparing for Cold Weather

With winter just around the corner diesel users should start preparing for operations in winter. The Australian Standard for diesel fuel has changed this year.

Ensuring that wax does not cause problems in cold weather requires a little extra care on the part of the user. The following section gives advice on what can be done and is taken from the Australian Standard 3570.

Fuel

Always use the appropriate diesel fuel for the season. For example the wax in summer diesel fuel comes out of solution at a higher temperature than for a winter diesel fuel. The temperature at which the wax forms crystals is called the cloud point. Diesel fuel is made to different cloud points depending on the month and location. These are defined in the standard AS 3570.

Storage Tanks

- 1) Remove water from storage tanks by frequent draining, water in suspension in the fuel will form ice crystals when the temperature is below 0°C. These will block filters.
- 2) Exposed pipework can chill the fuel and cause wax crystals to form. To prevent this exposed pipes can be lagged.

Equipment & Vehicles

- 1) On unusually cold nights keep vehicles garaged.
- 2) Cover fuel tanks and lines.
- 3) Appropriately prepare equipment before winter in line with the manufacturers instructions. This includes changing the oil, coolant, filters and checking and draining any water or sludge from the fuel tank.
- 4) On unusually cold mornings run the engine on low speed until it warms up.

Emergency procedure for cold start

Should wax crystals be causing a problem then the following emergency start up procedure has been taken from AS 3570.

- 1) Check dipstick to ensure engine oil is fluid. If the engine oil is fluid go to step 2. If it is not fluid do not attempt to start the engine because waxy fuel in the crankcase has frozen. Wait until the oil becomes fluid. Using an external heat source such as a

blow heater, steam line or exhaust gases from another vehicle will speed up the process. Once the oil is liquid then replace it with fresh oil in accordance with manufacturers instructions.

- 2) Attempt to start the engine. If the engine fails to start then check the fuel filter for wax. If the fuel won't flow or is hazy then the filter body and fuel lines will need to be heated using a blow heater or steam cleaner.
- 3) Once the engine starts run it at low speed until it is warm. This will prevent further blockages.

Never rev the engine violently after starting. This could damage the injection pump and bearings

Never light a fire under the vehicle fuel tank

Blending

If waxing problems are persisting then it is possible to add undyed heating oil (duty paid at diesel rate) to the bulk tank to lower the cloud point. Normally about 30 Litres of Heating Oil for each 100 Litres of diesel will fix the problem.

Alternatively kerosine at 10 litres for each 100 litres of Diesel fuel can be added to the vehicle fuel tank.

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