



### **CONTAMINATION OF LIGHTING KEROSENE**

BP Kerosine is a mixture of hydrocarbons, covering a boiling range from 160°C to 280°C designed for use in the following equipment:

1. Wick fed burners, and
2. Pressurised vaporising burners.

Lighting kerosine used in wick applications is very susceptible to contamination and is the focus of this Fuel News.

The three major wick applications are as

- Heaters
- Lamps
- Fridges

Contaminants that can affect the ability of lighting kerosine to perform as required are, other petroleum products, water & sediment (ie. dirt, rust, etc).

#### **EFFECTS OF CONTAMINANTS**

1. Wick Charring
2. Deposits on burner and fuel system surfaces.
3. Significant reduction of the service interval.
4. Any or all of these factors can lead to failure of equipment in severe cases

All wick fed kerosine appliances rely on capillary action to pull the fuel up the wick which is a mat of fine fibres. The wick is trimmed at the end where the fuel burns so that it provides a uniform burning surface. As the fuel burns a soft char or carbon encrustation slowly forms on the top of the wick as the fibres burn. This char is removed by regular trimming to provide a fresh burning surface.

Contaminants in the fuel will not burn as well as kerosine and will change the nature and quantity of the char, making it harder to remove because it will be oily or hard. Contaminants will also speed up the rate of formation of the char, eventually ruining the wick and causing uneven burning so that the flame goes out or is excessively smoky.

A minor contamination of kerosine with heavier products such as automotive diesel fuel, lubricating oil or fuel oil will result in the rapid formation of heavy wick char deposits. These fuels are not as volatile as kerosine and will not burn as well in a wick.

It has been found that as little as a teaspoonful of lubricating oil or fuel oil in five litres of kerosine will cause char and burning problems. To prevent this sort of problem, all kerosine containers should be kept clean and free of heavier oils. Using a container or pump for kerosine, which has previously contained heavier

fuel products is bound to contaminate the kerosine and cause burning problems unless the container is thoroughly cleaned first.

Sediment in any appreciable quantities will rapidly block fuel line filters and control valve mechanisms. It will also foul the wick causing uneven flames and charring. Sediment comes from dust and dirt or rusting of fuel systems from water contamination.

Water comes normally from condensation or leakage through incorrectly sealed containers. The water is absorbed on the wick and will stop fuel going through. It will also cause rusting and provide a home for fungus and bacteria.

### **HOW TO AVOID CONTAMINATION PROBLEMS**

- (i) Prevent contamination with other petroleum products. Do not mix with lubricating oil, zoom, distillate or other heavy material. Do not use containers that have previously held any of these products unless they have been properly flushed and cleaned.
- (ii) Exclude dirt and water from storage containers and fuel tanks.
- (iii) Drain the reservoir before storing the appliance and flush before starting up after a storage period.
- (iv) Keep wicks free of char with regular cleaning and trim level above the wick guide.
- (v) Keep air registers (air admission holes near the flame area) clean and dust free.

**For further information, please call the  
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