

To
All Owners /Agents/ Managers of all mines

Sub: Use of approved type of fuel in Velox - GL 7 and GL 50 Safety lamps

Velox - GL 7 and GL 50 flame safety lamps manufactured by M/s J K Dey and Sons have been approved by DGMS for detection and measurement of inflammable gas and deficiency of oxygen in mine atmosphere. One of the conditions of approval is that no fuel other than ESSO Solvent BP 1425 or its equivalent or motor spirit shall be used in the lamp.

It has been observed in most of the mines kerosene oil is being used as fuel in the lamp leading to poor flame which can lead to error in detection of gas. With use of ESSO Solvent BP 1425, or it's equivalent or motor spirit, instead of kerosene:

- (i) a steady flame is observed;
- (ii) testing flame can be easily seen;
- (iii) length of flame varies sharply with varying percentage of inflammable gas; and
- (iv) as the fuel is highly volatile with low flash point and less viscosity the relighting mechanism of GL 7 lamp works smoothly,

Use of kerosene oil as fuel also causes the cotton absorbent inside the oil vessel of flame safety lamp to solidify within a year or so, making it inactive to absorb any further oil which results in spillage of oil, low duration of flame and improper formation of testing flame. A steady flame is not formed and the flame gets extinguished with slight jerk, the oil vessel becomes hot, and the gas cap may not be formed at all.

A study was also carried out in CMRI, Dhanbad with three types of fuel namely ESSO Solvent 1425, petrol and kerosene. The report also confirms that the length of the blue flame in different percentage of inflammable gas is least when kerosene is used.

Therefore may I request all concerned not to use any fuel other than ESSO Solvent BP 1425 or its equivalent or motor spirit in the Velox - GL 7 and GL 50 Safety lamps for effective functioning of the flame safety lamps in mines.

Yours faithfully

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(Bhaskar Bhattacharjee)
Director General of Mines Safety