

## Description:



LPG fuel containing contamination not present historically is being placed on the UK market. The fuel standard BS 4250 does not provide adequate controls for this contamination.

Use of contaminated fuel can cause deposits in the fuel system leading to, for example, blocked vaporisers and sticking valves.

Repeated starting attempts on affected equipment can release unburned LPG and present a risk of fire.

Operation and maintenance practices should be revised until the fuel supply chain can guarantee fuel quality suitable for ICE use.

## Advice for Operators:



Park LPG fuelled vehicles in well-ventilated areas free from flammable material, particularly when parking overnight or for longer periods.

Do **not** park vehicles where LPG might accumulate, e.g. near to drains or inspection pits.

If the engine of an LPG truck does not start within the normal few seconds:



- Do **NOT** continue to crank the engine over
- Do **NOT** repeat the normal engine starting procedure
- Do **NOT** spray volatile agents into the air intake in an attempt to aid starting
- Do **NOT** apply shock or heat in an attempt to free the system
- Secure the truck against further starting attempts
- Close the shut-off valve on the gas bottle
- Ensure the area is well ventilated
- Contact your truck supplier and request a check of the LPG system on your truck



### Notes:

- i. Users of LPG fuelled trucks with push button starters where momentary operation engages the starter until the engine is running should consult their supplier.
- ii. Released LPG will not naturally disperse – do **not** return to a non-starting truck and re-attempt starting until it has been checked by a competent person.
- iii. Only competent, LPG trained maintenance technicians should work on LPG systems – do **not** assume that you have these skills.
- iv. Failure modes and the extent of component replacement required can vary by equipment type and degree of contamination experienced. If in any doubt, consult your truck supplier for advice.
- v. For an HSE Safety Bulletin on this topic visit [www.hse.gov.uk/safetybulletins/forklift-fires.htm](http://www.hse.gov.uk/safetybulletins/forklift-fires.htm).

## Advice for Service/Maintenance Engineers:

If you are presented with an LPG truck which has a reported starting problem:



- Do NOT follow the normal starting procedure
- Isolate the LPG supply (close the shut-off valve)
- Do NOT remove a spark plug to check for an ignition spark
- Ensure that the working area is well ventilated
- Ensure there is no risk of ignition through arcing, *then*
- Disconnect the battery
- Release LPG pressure trapped in the fuel supply system
- Follow the truck manufacturer's guidance for inspection of the LPG system

Remember that LPG is heavier than air, so it will accumulate in low lying areas where it can easily be ignited by an ignition source, such as sparks, electrical arc or a hot surface.

Extended starting attempts can lead to release of liquefied gas through the exhaust or air intake, which can result in large volumes of hazardous vapour/air mixture both inside truck compartments and in the surrounding area.

UKMHA Technical Bulletin 17 provides some general guidance on Maintenance & Inspection of LPG Systems, however, specific requirements, procedures and practices vary by truck make and model.

- UKMHA TB17 can be downloaded from the member's area of the UKMHA website
- Follow the truck manufacturer's guidelines at all times
- Do **not** use cleaning agents or working practices that are not approved by the truck manufacturer

## Hazards:



- Burns due to cooling as liquid evaporates
  - Use the appropriate PPE, e.g. hand and eye protection
- Asphyxiation due to inhalation of vapour
  - Ensure adequate ventilation and good working practices
- Fire/Explosion
  - Apparently empty spaces may contain hazardous mixtures
  - Do **not** introduce ignition sources: Do **not** apply heat
  - Do **not** apply flammable aerosols, e.g. brake cleaner:  
This can cause uncontrolled combustion in and around the airbox



## Check for:

- Evidence of LPG emissions
  - Smell, frosting, shimmering
- Extent of problem
  - Deposition can occur at any point in the fuel system, including inside control valves and in the inlet manifold
  - Do **not** apply heat in an attempt to soften or burn off hard adherent deposits



If you have any concerns: **STOP** and consult your supervisor.