



BBC Studioworks – Kelvin Hall

# Storage & Use of Gas Cylinders

Health & Safety Arrangements

## 1. Introduction

Gas cylinders are utilised in several applications by BBC Studioworks; Nitrogen gas for the pressurisation of camera pedestals and LPG gas for cooking in a studio programme. Whilst the use of LPG cylinders, incorporated into a studio set, is the responsibility of the relevant production, BBC studioworks has a duty to ensure that the correct procedures are followed to ensure the health and safety of all those involved in the production and to provide adequate and suitable storage facilities for the LPG cylinders, when not in use.

## 2. Nitrogen Cylinders – Camera Pedestal Pressurisation

All gas cylinders, when under pressure, may present a risk of explosion if not handled or stored correctly. Furthermore gas cylinders are never fully empty, unless a cylinder is new, de-valved, or where it has not yet been filled with a gas. Therefore cylinders containing a gas, regardless of quantity or type, must be properly stored and handled.

Nitrogen cylinders are stored and used in the Camera Workshop and in the Camera Store. The cylinders are securely chained to fit-for-purpose trolleys which prevent the cylinders from falling over and their use is managed by competent BBC Studioworks staff.



## 3. LPG Cylinders – Studio Productions

In general, the precautions to be taken in handling LPG are similar to those applying to petroleum spirit but in particular, all persons concerned with the handling of LPG should be familiar with the following properties:

- LPG is normally stored as a liquid under pressure.
- Leakage, especially of liquid, may release large volumes of flammable gases.

- A very small proportion of LPG released into air can give rise to an explosive mixture.
- LPG vapour is heavier than air and may flow along the ground or through drains and be ignited at a considerable distance from the source of leakage. In still air, any vapour will disperse slowly.
- LPG liquid, by its rapid vaporisation and consequent lowering of the temperature, can cause severe frost burns if it comes into contact with the skin.
- For general purposes, LPG is odorised before distribution so that the distinctive smell can give warning of a gas escape.

### Storage

The storage of LPG in the open air is not practicable, therefore the cylinders are stored within the building, but the quantities stored must not exceed;

### Maximum quantity of LPG cylinders or cartridges = 70 kg

**NOTE:** No more than 5 cylinders or 20 if the maximum capacity is 3kg. No cylinder must exceed 20kg capacity.

The storage area provided limits the number of LPG cylinders that can be stored to an acceptable quantity.



Cylinders should be inspected regularly for leakage. Leaks can be detected by:

- Sense of smell
- The sound of escaping gas
- By condensation or frosting round the leak
- Leaks may be confirmed by brushing soapy water over the suspected leak source.

If a cylinder is found to be leaking and the leak cannot be stopped by closing the valve or inserting the bung or fitting the cap, nearby sources of ignition must be extinguished and the cylinder

carefully removed to a well ventilated open space clear of drains and buildings and free from all sources of ignition. It should be left with the leak uppermost, marked as faulty and notices displayed prohibiting smoking and other naked lights.

#### **Additional fire safety requirements**

The gas cylinder storage area is incorporated into the Site Fire Safety Management Plan and the location of the gas cylinder store is recorded within the site's hazardous locations record, held by the emergency services.

A 9kg dry powder fire extinguisher with a rating of at least 223B and comply with BSEN 3, should be located in an easily visible position near exits, at perimeter of the store and in safe positions on access routes between stacks.

#### **References**

Code of Practice 44 The Storage of Gas Cylinders – British Compressed Gases Association

Code of Guidance for the Storage of Full and Empty LPG Cylinders and Cartridges – Calor Gas Ltd.