

THE STORAGE OF GAS CYLINDERS

What is the hazard?

Cylinders containing compressed, liquefied or dissolved gases can create a dangerous situation in the event of a fire. This is because they may explode as a result of the heat generated. The cylinders themselves are pressure vessels and need to be handled accordingly. In principle, empty cylinders should be treated in the same way as full cylinders.



How to reduce the risk

Check the relevant national or other regulations for permitted maximum quantities and the possible separation distances of various gases, in accordance with their hazard classification.

STORAGE AREA

Gas cylinders should preferably not be stored inside buildings. The storage should take place outside taking into account the distance to the buildings.

The gas cylinders should be stored in purpose-built facilities, which are kept locked. An adequate outside gas cylinder storage facility is of the “bus stop” type model, with three walls and a roof and the remaining side being covered by a metal wire-mesh or grill. The following issues should be dealt with:

- Only authorised personnel should have access to the storage facility.
- The storage facility should be dry and have adequate ventilation.
- A sun cover should be provided to shade the cylinders from direct sunlight as necessary.
- The temperature of the storage facility should not exceed +65 °C.
- The floor level should not be lower than the floor level of the surrounding area.
- The cylinders should be fixed (chained) to their position.

If the storing of gas cylinders inside a building is unavoidable, then the storage area should be located close to an outside door. This will provide the fire brigade with an opportunity to remove the cylinders in the event of a fire.

Readily-ignitable substances, e.g. flammable liquids, should not be stored near the gas cylinders. The cylinders should not be exposed to corrosive chemicals or fumes.

Gas cylinder delivery vehicles should have an easy and safe access to the storage area.

It should be possible to remove the cylinders quickly and safely from the storage area e.g. in the event of a fire.

The locations of gas storage should be clearly marked using the appropriate signs and they should be included in the emergency response plan for the site as well as indicated on the site plans distributed to the fire brigade.

THE HANDLING OF GAS CYLINDERS

The gas cylinders should be checked carefully when they are being received. The cylinders should be clearly and legibly marked and/or labelled to ensure it is possible to identify their contents. The material safety data sheets (MSDS) should be available at the storage facility. The cylinders should not be damaged or misused. If they are, the user should refuse the delivery and contact the supplier.

All of the gas cylinders, including the empty ones, should at all times be kept in an upright position and secured to their position by e.g. chains to prevent them from falling. Purpose-made racks, often provided by the gas manufacturers or suppliers, are recommended.

The valves of the stored gas cylinders should be kept closed, and the protection caps or similar guards over the valves should always be securely in place.

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