

What should be considered when storing pressurized gas cylinders!

Pressurized gas cylinders belong to the things in stock which are subject to strict restrictions due to their tremendous hazard potential. The most important regulations are regulated by TRGS 510. We already have compiled some important extracts from the TRGS 510 below.

4.2 Storage locations and rooms:

- (4) Generally hazardous substances may not be stored in places where this could mean a risk to workers or other persons.
 1. Such places are, in particular, traffic routes. Traffic routes include, among others, stairs, corridors, escape and escape routes, passageways, driveways and narrow courtyards.
 2. Places which are not suitable for the storage are lunch rooms, ready rooms, sanitary rooms, emergency rooms or daytime accommodation.
 3. Hazardous substances may only be stored in workrooms if the storage is compatible with the protection of workers and if it is carried out in special facilities which correspond to the state of the art.



Storage in rooms

10.1 Field application:

- (1) The regulations are to be observed when storing gases which are labeled with H220, H221, H270, H280 or H281 according to CLP-VO and which are stored in quantities of more than 2.5 l.

10.2 Organizational measures:

- (1) Compressed gas cylinders have to be secured against falling or falling down. The valves have to be protected by a suitable protective device.
- (2) Gases are not to be transferred in the store, furthermore no maintenance work on compressed gas cylinders are to be carried out.
- (3) Acute toxic gases must be kept under lock and key or they have to be stored in such manner that only qualified and reliable persons have access.
- (4) Gases marked with H330 may only be stored in rooms if they have a gas warning device which alerts acoustically and optically when the permissible operating limit values are exceeded.

10.3 Constructional requirements and fire protection:

- (1) For storage in stockrooms
 1. rooms have to be separated from adjoining rooms by at least fire-resisting components (F 30),
 2. components have to be fire-resistant, if there is any danger of explosion or fire hazard in adjoining rooms not intended for the storage of pressurized gas cylinders,
 3. external walls of stockrooms have to be at least fire-retardant. If the safety distance to adjacent plants and installations which incurs danger is at least 5 meters the external wall may consist of non-combustible material.
- (2) Stockrooms outdoors have to keep a safety distance of at least 5 meters to adjacent plants and installations which incurs danger.
- (3) Compressed gas cylinders may only be stored in suitable safety cabinets with a fire-resistance of at least 30 minutes. Acutely toxic gases may only be stored in safety cabinets with an air exchange of 120-fold per hour. Oxidizing or flammable gases may only be stored in technical ventilated safety cabinets with a 10-fold air exchange per hour.
- (4) A maximum of 50 filled compressed gas containers may be stored in rooms below ground level, if
 1. a technical forced ventilation with a 2-fold air exchange per hour is ensured,
 2. for natural ventilation the ventilation openings have to have at least a total cross-section of 10% of the floor area of the room, an aeration is given and the floor is not more than 1.5 m below the ground level or
 3. they are stored in safety cabinets meeting the requirements of DIN EN 14470-2.
- (5) Rooms in which compressed gas containers are stored have to be vented appropriately. A natural ventilation is sufficient if the venting slots with a total cross-section of at least 1/100 of the floor area of the stockroom are leading directly into the open area.



Storage outdoors

10.4 Special protective measures:

- (1) In the case of acute toxic or flammable gases, protective areas around pressurized gas cylinders are to be installed. These areas must be taken into account in the hazard assessment, for example explosion protection measures may be necessary.