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Compressed Gases

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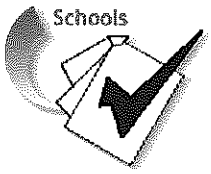

Self-Inspection Checklist

Optional Information

Name of school:

Date of inspection:

Career-Technical program/course/room:

Signature of inspector:

Guidelines

This checklist covers regulations issued by the U.S. Department of Labor, OSHA under the General Industry standard 29 CFR 1910.101. It applies to the handling, storage, and use of compressed gases in cylinders or portable tanks. The regulations cited apply only to private employers and their employees, unless adopted by a state agency and applied to other groups such as public employees.

The OSHA standard adopts by reference the Compressed Gas Association's (CGA) Pamphlets C-6-1986, C-8-1962, and P-1-1965. The following questions relate to the more common precautions to be taken in school environments. The checklist, however, is not all inclusive. The Compressed Gas Association has updated the three pamphlets cited by OSHA as C-6-1993, C-8-1997, and P-1-1999.

1. Are cylinders stored in upright positions and immobilized by chains or other means to prevent them from being knocked over? [CGA 3.4.4 and 29 CFR 1910.101(b)]
   Note: Tragic accidents have occurred when a cylinder was knocked over, damaging the cylinder and turning it into a rocket.
2. Are cylinders stored away from highly flammable substances such as oil, gasoline, or waste? [CGA 3.3.6]
3. Are cylinders stored away from electrical connections, gas flames or other sources of ignition, and substances such as flammable solvents and combustible waste material? [CGA 3.5.1]

4. Are flammable gases separated from oxidizing gases in storage areas? [CGA 3.3.3]
   Note: Acetylene and propane cylinders should be separated from oxygen cylinders when not in use.
5. Are oxygen and fuel gas cylinders separated by a minimum of 20 feet when in storage? [CGA 3.5.3]
   Note: A fire-resistant partition between the cylinders can also be used.
6. Are storage rooms for cylinders dry, cool, and well- ventilated? [CGA 3.3.5]
   Note: The storage rooms should be fire resistant and the storage should not be in subsurface locations. Cylinders should be stored in secure areas at temperatures below 125°F, away from radiators or other sources of heat.
7. Are cylinders stored away from incompatibles, excessive heat, continuous dampness, salt or other corrosive chemicals, and any areas that may subject them to damage? [CGA 3.3.7 and 29 CFR 1910.101(b)]
   Note: Rusting will damage the cylinder and may cause the valve protection cap to stick.
8. Is the storage area permanently posted with the names of the gases stored in the cylinders? [CGA 3.3.2 and 29 CFR 1910.101(b)]
9. Do all compressed gas cylinders have their contents and precautionary labeling clearly marked on their exteriors? [29 CFR 1910.101(b)]
10. Are all compressed gas cylinder valve covers in place when cylinders are not in use? [29 CFR 1910.101(b)]
11. Are all compressed gas cylinders stored so they do not interfere with exit paths? [29 CFR 1910.101(b)]
12. Are all compressed gas cylinders subjected to periodic hydrostatic testing and interior inspection? [29 CFR 1910.101 (a)]
    Note: This is normally done by the supplier.
13. Do all compressed gas cylinders have safety pressure relief valves? [29 CFR 1910.101(c)]
14. Are cylinders always maintained at temperatures below 125°F? [CGA 3.1.12]
    Note: A flame should never come in contact with any part of a compressed gas cylinder.
15. Are safety relief devices in the valve or on the cylinder free from any indication of tampering? [CGA 3.1.14]
16. Is repair or alteration to the cylinder, valve, or safety relief devices prohibited? [CGA 3.1.15]
    Note: All alterations and repairs to the cylinder and valve must be made by the compressed gas vendor. Modification of safety relief devices beyond the tank or regulator should only be made by a competent person appointed by management.
17. Is painting cylinders without authorization by the owner prohibited? [CGA 3.1.20]
    Note: Often color codes are used to help designate cylinders. Arbitrary paint is not recommended.
18. Are charged or full cylinders labeled and stored away from empty cylinders? [CGA 3.3.4 and 29 CFR 1910.101(b)]
19. Is the bottom of the cylinder protected from the ground to prevent rusting? [CGA 3.3.9]
20. Are all compressed gas cylinders regularly inspected for corrosion, pitting, cuts, gouges, digs, bulges, neck defects and general distortion? [29 CFR 1910.101(a)]
21. Are cylinder valves closed at all times, except when the valve is in use? [CGA 3.1.15]
    Note: Regulator diaphragms have failed, and unwanted gas was delivered to an area or apparatus, causing safety and health problems.
22. Are compressed gas cylinders always moved, even short distances, by a suitable hand truck? [CGA 3.2.6]
    Note: They must never be dragged across the floor. Serious accidents have occurred when a cylinder with a regulator in place was improperly moved. The cylinder fell, causing the regulator to shear off, and the cylinder rocketed through several brick walls.
23. Is using wrenches or other tools for opening and closing valves prohibited? [CGA 3.4.9]
    Note: Hammering on valve wheels to open them should be strictly prohibited. For valves that are hard to open, contact the supplier for instruction

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24. Are suitable pressure regulating devices in use whenever the gas is emitted to systems with pressure-rated limitations lower than the cylinder pressure? [CGA 3.4.5]
25. Are all compressed gas cylinder connections such as pressure regulators, manifolds, hoses, gauges, and relief valves checked for integrity and tightness? [29 CFR 1910.101(a)]
26. Are all compressed gas cylinders regularly subjected to leak detection using an approved leak detecting liquid? [29 CFR 1910.101(a)]
    Note: Ordinary soap solution may contain oils that are unsafe when used with oxygen cylinders. Leak detection liquids are available from commercial welding supply houses.
27. Is an approved leak-detection liquid used to detect flammable gas leaks ? [CGA 3.5.2]
    Note: A flame should never be used.
28. Are procedures established for when a compressed gas cylinder leak cannot be remedied by simply tightening the valve? [CGA 3.1.6]The procedures should include the following:
    1. Attach tag to the cylinder stating it is unserviceable.
    2. Remove cylinder to a well ventilated out of doors location.
    3. If the gas is flammable or toxic, place an appropriate sign at the cylinder warning of these hazards.
    4. Notify the gas supplier and follow his/her instructions as to the return of the cylinder.
29. Are students/employees prohibited from using compressed gases (air) to clean clothing or work surfaces? [29 CFR 1910.101(b)]
30. Are compressed gases only handled by experienced and properly trained people? [CGA 3.4.1]

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