



MAFES Dawg Tracks

April 28, 2014



Compressed Gas Cylinder Safety Tips



Most all of us have heard the gruesome stories of compressed gas cylinders exploding, becoming projectiles and demolishing everything and anything in their path. I had photos of a cylinder in a pickup truck where the driver had a sudden stop at a traffic light with the cylinder not secured in the truck bed. It came up in the cab, but luckily it didn't explode; and another where the cylinders cap came off and went through a cinder block wall. Please, at your convenience, take a look at this video and see the results of a cylinder that exploded. The link is: http://youtube.com/Watch?v=9lw_fhNAIQc.

This video will demonstrate what can happen if you don't respect and care for the cylinders according to safety protocol.

Identify Cylinders Properly-

- ✓ Cylinders should be clearly labeled to identify the contents within.
- ✓ Cylinders not clearly identified should not be put into use.

Store Cylinders Securely-

- ✓ Store cylinders upright, using a chain, wall mounted bracket or a floor bracket secured to a table or wall.
- ✓ Select a dry well-ventilated location away from heat sources and electrical wiring.
- ✓ Cylinders should be located at least 20 feet (6 meters) away from other combustible materials.

Keep Oxygen and Combustibles Apart-

- ✓ Store oxygen at least 20 feet (6 meters) away from combustible materials or fuel cylinders.
- ✓ If space is limited, separate the cylinders using a 5-foot (1.5 meter) high barrier using a fireproof material with at least a ½ (half hour) rating. (Ex. A concrete block wall).
- ✓ Cylinders should be stored with the caps closed and the protective cap screwed down to the last thread for protection.
- ✓ Acetylene cylinders must be stored with the valve end up and the protective cap screwed on and tight.
- ✓ Do not store cylinders in their sides.
- ✓ Designate the area as "No Smoking."

Handle (and move) Cylinders with Care-

- ✓ Move cylinders only when absolutely necessary.
- ✓ The potential for an explosion increases each time that a cylinder is moved.
- ✓ Secure each cylinder upright on a hand truck or cylinder cart- be careful not to drop, bang, or bump the cylinder during a move.
- ✓ Use extreme caution when moving a cylinder on an elevator- the sudden release of gases can cause asphyxiation or death in the most extreme cases.

- ✓ It is recommended to have a "buddy" system when moving cylinders on an elevator - or send the cylinders on the elevator - and you take the stairs to their destination. (In our case- this would only apply to the multi-floor facilities on the main campus).
- ✓ For personnel who spend a significant amount of time working with cylinder movement - they should wear steel-toed boots or shoes and clean, protective gloves.
- ✓ Personnel should be familiar with the protective equipment such as fire extinguishers, respirators, eyewear protection, etc.
- ✓ Gas cylinders should not be moved with the regulator attached.
- ✓ Cylinders should not be exposed to continuous dampness nor stored near salt or other corrosive chemicals or fumes. Corrosion may damage the cylinders and cause their valve protection caps to stick.
- ✓ Cylinders should not be transported with the regulator attached.

Avoiding Accelerants-

- ✓ Keep cylinders away from areas where ignition sources are present, such as sparks or fire.
- ✓ Do not use grease or oil on the cylinders and don't handle them with greasy hands or with greasy gloves.

Empty Containers-

- ✓ Empty cylinders aren't really empty- they contain gas at atmospheric pressure, which does not cause a deflection of the gauge needle because the gauge reports psig. The pressure greater than atmospheric.
- ✓ In absolute terms, the cylinder still contains approximately 15 psia (pounds per square inch absolute). Depending on the cylinder size, this can be a substantial quantity of toxic or flammable substance.

Before empty cylinders are returned ensure that the following checks are made and the cylinders are in good condition:

- The cylinder valve is closed and not leaking
- The cylinder valve outlet plug or cap nut, when supplied, has been securely refitted. (This is particularly true if the contents of the cylinder are toxic).
- The cylinder valve protection device is properly fitted.

**YOUR LIFE DIDN'T BEGIN
WITH AN ACCIDENT
DON'T LET IT END WITH ONE!**

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ALERT TODAY <><><>

<><><> **ALIVE TOMORROW!**

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Excerpts: <http://safetysmart.com/Article.aspx>
<http://www.chem.purdue.edu/chemsafety>

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