

Jobsite Safety Talks

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Acetylene Cylinders

Acetylene cylinders are commonly used on construction sites. It is important that employees understand the importance of handling acetylene properly. Failing to do so may lead to a serious accident.

Acetylene cylinders are specifically designed to store this volatile gas. The gas passes through filters, where it is purified, then compressed into the cylinders at psig.

Methods used to safely store acetylene cylinders

- Cylinders are filled with a substance such as pith from cornstarch, fuller's earth, lime silica, and similar substances, which absorb acetone.
- Cylinders are then charged with acetone, which absorbs acetylene. The theory is that acetylene molecules fit in between the acetone molecules.

Using both of these techniques prevents the accumulation of a pocket of high-pressure acetylene.

Safety Fuse Plugs – Have a metal center, which will melt at a temperature of approximately 212 degrees F. If the cylinder is subjected to a high temperature, the plugs will melt and allow gas to escape before the pressure builds up enough to burst the cylinder. These precautions are necessary. The pressure in an acetylene cylinder builds up rapidly with an increase in temperature.

Acetylene Cylinder Valves – Come in two types. The first and most common type is fitted with a handwheel. The second is provided with a 3/8-inch square shank. It is turned by means of a 3/8-inch square box wrench that must be left on the valve stem when the stem is open. This is important to allow for quick shut off in an emergency. When using either type of valve, it is recommended that the cylinder valve be opened no more than ¼ to ½ turns.

Acetylene Cylinder Gauges – The storage of acetylene in its gaseous form under pressure is not safe at pressure above 15 psig. Using gauges that are in good working order is necessary to use acetylene safely. Failing to regulate the pressure to 15 psig. or less may cause the gas to become unstable.

Acetylene Cylinder Storage – Cylinders must be secured in an upright position with their valve protection caps on. Cylinders must also be separated from oxygen cylinders by 20 feet or by a 5-foot high wall with a fire resistance rating of at least ½ hour.

Note: For additional information covering this topic refer to the Material Safety Data Sheet (MSDS) for acetylene and reference 29 CFR 1926.350 or contact **GBC Safety and Construction Services**.

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