# Appendix G: Flammable Gases

Any gas for which flammable limits in air are reported is considered flammable. However, if the gas were also toxic, then toxic would be the primary hazard with flammable noted as secondary. When using, handling, or storing a compressed gas that lists its primary and secondary hazard as flammable, incorporate the following controls into your standard operating procedures for using, handling, and storing compressed gases.

| CONTROL | DESCRIPTION |
|---|---|
| **Engineering Controls:** All Quantities | • All lines and equipment associated with flammable gas systems must be grounded and bonded.<br>• Flash arrestors are designed to prevent a flash-back, should it occur, in a line containing a flammable gas.<br>• Portable fire extinguisher must available in the area where compressed gases and cylinders are used and stored.<br>• Use spark- proof tools when working with flammable gas.<br>• Do not use vessels, piping, or other materials that contain a significant amount of copper (usually considered to be more than 50% copper) with cylinders containing acetylene |
| **Administrative Controls** | • Do not use acetylene at an operating pressure over 15 psig.<br>• Do not leave flow experiments using flammable gases unattended. |
| **Engineering Control:** Above the UCR MAQ | Flammable gas quantities above the UCR MAQ may be required to have the following engineering controls:<br>• The workspace is equipped with a continuous gas detection system.<br>• The gas detection system must initiate a local alarm that is both visible and audible.<br>• The gas detection system must transmit a signal to a constantly attended control station.<br>• Activation of the gas detection system must automatically shut off the flow of gas related to the system being monitored.<br>• The gas detection system must detect the presence of gas at or below the Lower Explosive Limit (LEL). If the gas is also toxic, the system should detect the presence of gas at or below the OSHA permissible exposure level or ceiling limit of the gas in lieu of the LEL.<br>• Emergency power must be provided for the exhaust ventilation, gas detection system, and alarm systems when required.<br>• Sprinkler protection for gas cabinets and other protective features may be required.<br>**NOTE:** This information is for general guidance. Consult with your EHS representative to determine requirements for your particular usage. (951) 827-5528 |