



EHS

ACETYLENE SAFETY ALERT

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Recently, the Office of Environmental Health & Safety (EHS) identified a research laboratory using copper tubing to transport acetylene gas into various pieces of equipment. According to multiple resources and the [Material Safety Data Sheet](#) (MSDS), acetylene (C₂H₂) is known to form very explosive metallic salts when exposed to metals such as copper, silver, mercury, and brass with high (65% or more) copper content. Utilizing copper tubing or regulators not manufactured specifically for acetylene use poses a severe risk to laboratory personnel.

The Office of Environmental Health & Safety recommends that all persons using acetylene gas inspect their systems to ensure that the regulators are manufactured for acetylene and that copper tubing or brass fittings are not in use. Stainless steel tubing is recommended.

If improper regulators, copper tubing, or brass fittings are discovered the user should:

- Report the findings to their supervisor and the Office of Environmental Health & Safety at 3-1737 during normal business hours.
- Inform laboratory personnel of the situation.
- Place a sign on the tank stating, “Warning: Incompatible Material! Do not attempt to disconnect or modify any part of this compressed gas system”.

Once notified, EHS will visit the laboratory and develop the necessary plans to safely remove the hazard from the laboratory.

The same properties that make acetylene an attractive gas for cutting and welding also make it an extremely dangerous gas to use. Acetylene is incompatible with many other materials including, but not limited to, bromine, cesium hydride, chlorine, cobalt, and nitric acid. In addition, acetylene gas may decompose explosively at elevated temperatures and pressures. The best way to ensure that you understand all of the hazards associated with the materials you are using, including compatibility, is to read the Material Safety Data Sheet. For this reason, the Office of Environmental Health & Safety strongly recommends that reading Material Safety Data Sheets become a standard practice for all individuals working in Teaching or Research laboratories. Material Safety Data Sheets for most hazardous chemicals used on campus may be obtained at the following web site:

<http://www.brown.cems.sr.unh.edu/GuestHome.shtml>

If you cannot find the MSDS you are looking for please contact EHS at 3-3353 for assistance. If you have any questions regarding the content of this Safety Alert please contact Daniel Sarachick (Chemical Hygiene Officer) at 3-1737.