

NASA - LaRC
SAFETY NEWSLETTER
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Safe Side Of Compressed Gases

Any material that is under pressure can be dangerous if it is not handled properly. If the material is a compressed gas it may be flammable, explosive, reactive, toxic or a combination of those. Because of the hazards of compressed gases, it's important to know what you're working with, what its hazardous properties are and how to safely handle its container, (the compressed-gas cylinder).

Identify It Positively

Before handling any compressed-gas cylinder, identify it by its identification and hazard labels, not its color. (Different manufacturers use different color codes.) Check the label for hazards, and read MSDS instructions on handling and protective equipment. Each cylinder should be labeled for maximum approved pressure, with a current test date on the label. Cylinders missing this information should not be handled.

Handling Cylinders

Only trained persons should unload cylinders. Before accepting cylinders, inspect them for damage or leaks. Inspect them at regular intervals and move damaged or leaking cylinders to a safe, isolated storage area. A ruptured cylinder can literally become a rocket with the force to blast through a concrete wall. When moving cylinders, use special cylinder hand trucks, with the cylinder lashed to the cradle and standing as upright as possible. Avoid dropping, banging or rolling cylinders. Keep them away from fire, heat and sparks.

When using cylinders, open the valve slowly, with the cylinder pointed away >from personnel. Make sure the hoses and connections are clean and in good condition each time you use the cylinder. When cylinders are not in use, screw down the protective metal cap to the last thread. Empty cylinders should be labeled as such and kept separate from full ones.

Safe Storage

Compressed-gas cylinders should not be stored in temperatures above 125 degrees F (51.7 C), in direct sunlight, or subjected to artificially created low temperatures. Keep cylinders upright, secured with a chain or cable, in a safe, fire-resistant, well ventilated area, away from heat sources, combustible materials and electrical wiring.

Group cylinders with others of the same contents, and store empty cylinders separately. Avoid using cylinders in confined spaces. Rotate stock, using older cylinders first.

Special Handling

These are some compressed gases that require special treatment:

- * Oxygen: While not flammable in itself, oxygen increases the tendency of things around it to burn or explode. Keep oxygen cylinders away from combustible or flammable materials and fire hazards, including oil or grease on your hands, clothes and work area. Oxygen should not be used in place of compressed air.
- * Chlorine and Fluorine: These gases are highly corrosive and irritating, and will attack many materials. When mixed with acetylene and exposed to light, they may explode. Chlorine will form corrosive hydrochloric acid in water, eating into iron or steel equipment. A gas mask and other protective equipment should be available for use in case of a leak.
- * Ammonia: This is a highly corrosive also. When using it, make sure you have quick access to a gas mask and other protective equipment.
- * Acetylene and Hydrogen: These are both highly explosive gases that must be handled with extreme caution. Hydrogen escapes easily from threaded fittings that are not completely tight, and such leaks can ignite spontaneously from the friction of the escaping gas. Hydrogen has no odor to warn of a leak.

Laser Awareness

Lasers are everywhere these days and we no longer think of them as a weapon as we did years ago. As with all electronic gadgets we use, from stereos, watches, computers, and many more, micro chips and other components have made these items much smaller, lighter, and more powerful. These advancements also hold true for the laser. In the past Diode Lasers were considered relatively

safe to the eye due to their low power output. Most LaRC users of laser diodes are aware that these very small, innocuous appearing devices are now being manufactured with power outputs that are extremely hazardous to the eye.

Laser workers should not be lulled into a false sense of security when working with these very small and seemingly harmless laser devices.

Remember, at LaRC, eye protection devices which are specifically designed for protection against radiation from Class 3b and Class 4 laser systems SHALL be administratively required and their use enforced when engineering or other procedural and administrative controls are inadequate to eliminate potential exposure in excess of the applicable maximum permissible exposure.

Any questions concerning lasers, laser operations and laser eye protection should be forwarded to the LaRC Radiation Officer, Phil Babb, at extension 4-3210.

SAFETY CLASSES OFFERED

Just a reminder that the following safety training classes are available to be presented for you at your safety meetings.

- Confined Spaces (permit required)
- Confined Space Awareness
- Personal Protective Equipment (PPE)
- Ergonomics (Office or Industrial)
- Material Safety Data Sheets (MSDS)
- Heat Stress
- Cryogenics
- Chemical Safety (Chemical Refresher)
- General Office Safety

If you would like to setup a class, contact your supervisor and he can schedule by contacting Butch Jones at 4-8743.