Compressed gases
Compressed gases are gases which have been stored in containers such as cylinders or pipelines under immense pressure.

Health effects

✓ Will vary from gas to gas. Consult the Safety Data Sheet (SDS), cylinder labels, other sources.
✓ May displace Oxygen from an area if containers leak in a small and/or enclosed rooms.
✓ Will be extremely cold when released to atmospheric pressure. Frostbite to exposed skin or eyes can occur.

Physical hazards

✓ Under EXTREME pressure. Cylinders must be protected against damage and collision.
✓ Gases may be incompatible with other gases and must be physically segregated. Acetylene must be stored at least 25 feet from Oxygen.
✓ To prevent BLEVEs (Boiling Liquid Expanding Vapor Explosions) kill or remove all vegetation and other combustible material from outdoor, bulk storage of flammable gases (i.e. Propane).

Work practices

✓ Store cylinders (empty or full) in designated areas. Protect from impact, tipping, etc.
✓ Valve protection caps must be used when possible.
✓ Cylinders must ALWAYS be secured in an upright position using methods which provide adequate physical strength and integrity.
✓ Never use unapproved materials, such as PVC pipe, in pipelines, manifolds, or other systems.

Personal Protection

✓ Wear Personal Protective Equipment, including goggles and gloves in required when making/breaking compressed gas connections.

First Aid

✓ Consult the Safety Data sheet for the specific gas in use.

Figure 1. Results of a BLEVE involving 18,000 pounds of Propane.
Knowledge check

1. What is the primary hazard of working with compressed gases?
   A) Back injuries from lifting heavy cylinders
   B) Exposure to toxic gases
   C) Pinching fingers between cylinders when handling
   D) Extreme pressurization

2. Compressed gases may be...
   A) Toxic
   B) Flammable
   C) Reactive/Incompatible
   D) Asphyxiating
   E) All of the above

3. Even “empty” cylinders must always be secured in an upright position.
   True or False

4. The best way to move a compressed gas cylinder is to roll it on its bottom edge, or drag it.
   True or False

5. Which of the following statements is true?
   A) Empty cylinders have no hazards.
   B) Empty cylinders may be stored anywhere, because they have no hazards.
   C) There is no such thing as an “empty” cylinder.