

Pyrophoric Compressed Gases

A gas with an auto-ignition temperature in air at or below 130° F (54.40C) is considered pyrophoric.

Examples of pyrophoric gas are arsine, silane, disilane, dichlorosilane, and diborane.

Handling and Safety Procedures

- Submit a Standard Operating Procedure (SOP) and get approval from OH&S before ordering any pyrophoric gases.
- Store pyrophoric gases inside mechanically ventilated gas cabinets – always!
- Ensure that, outside each gas cabinet, devices for remote manual shutdown of the pyrophoric gas flow exist.
- Check for redundant controls that prevent pyrophoric gas from igniting or exploding with all pyrophoric gas flow, purge, and exhaust systems
 - Confirm that the controls include excess flow valves, flow orifices, mass flow controller sizing, process bypass line control, and automatic gas shutdown.
- Make sure that emergency backup power is provided for all electrical controls, alarms, and safeguards associated with the storage and process systems.
- Purge all process system components and equipment with a dedicated inert gas cylinder.
- Consult with OH&S before purchasing pyrophoric gases.
- Develop and make available Standard Operating Procedures (SOPs) for pyrophoric gases. These SOPs shall include emergency response, and training for all involved employees
- Provide, train, and practice an emergency response procedure for everyone working in the area.
- Have documented training for all lab personnel who will be working with pyrophoric gases.
 - Training must include the correct use of regulators and the detection of leaks.
 - Intermittent pyrophoric gas emergency drills are required and must include all of those working in the area, whether in contain with pyrophoric gases or not.
 - Train employees to work with pyrophoric gases and allow only those trained to work with them.
- Wear PPE at all times while working with pyrophoric gases.
- Require a minimum of two people in the lab when pyrophoric gases are being used.
- Read labels and view the Safety Data Sheets (SDS) often to remember and observe all safety use guideline

