

Hazards associated with the gas system and how to mitigate them

Do not enter the gas shack if the rotating red light at the entrance is on. This warns of an oxygen deficiency.

In General the Gas Mixing shack can be a hazardous place – BE AWARE OF YOUR ENVIRONMENT..

There are hazardous gas detectors that will cut off any gas flow at 10% of the lower explosive limit and oxygen deficiency monitors that will alarm if there is a less than 19% oxygen level.

Gas bottles are a hazard to move. Breaking the stem on a gas bottle can cause flying debris

Never move a bottle without the cap fastened. Always earthquake brace bottles at two points in the place they are to be used or stored. Always keep control of the bottle with two hands while moving.

The gases used in the calibration routine present a cryogenic hazard.

Be certain that the bottle is plumbed into the correct gas circuit and the fittings are tight before opening. When removing a bottle be certain to valve off the gas; At the bottle first, at the gas panel second. Slowly bleed the lines before disconnecting.

There is a marked step up both on to the gas pad and into the gas shack.

Be aware. It easy to trip while making a step into empty space when coming out of either one.

Side of racks must be re moved.

To access some of the valves the side of the rack should be removed. This can fall rapidly and cause alarm or an injury. The rack side panel should be supported by one hand while turning the locking screw. Two hands should be used to lift and carry the side panel out of the way.

Recovery from a Gas Alarm

Name: _____

Date: _____ Time: _____

- Select rest mode to reset alarm
- Record source of alarm below (use EPICs panel “alarms for last 33 seconds”):

- Source of alarm has been repaired or does not need repairing
- Select “output” sample point

If the chamber pressure is about 3.95 mbar you may be able to restart directly.

- Select “run” mode
- Monitor circulation pressure, circulation flow and the isobutane concentration.
- It is likely that the system will go back into alarm mode. But if circulation pressure is improving, try selecting run mode a few more times. Be sure the “output” sample point is selected.

If the chamber pressure is below 3.95 mbar, or if selecting run mode hasn't worked, perform the following steps:

- Set “Helium 10 lt/min” flowmeter to 50%
- Select “run” mode
- Monitor circulation pressure, circulation flow and the isobutane concentration.
- It is possible that the system will go back into alarm mode. If so, make sure that “output” sample point is still selected, then try again.
- Reduce “Helium 10 lt/min” flowmeter to 0 in steps of 10% or so.

Once the system is running again:

- Reset DCh SIAMs in rack B620B-10
 - Inform shift leader that system is running again.
 - Verify isobutane content is within specifications. If not, you will need to adjust the input slightly.
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- File this checklist in binder in gas hut.

