SAFETY BULLETIN

King Abdullah University of Science and Technology

جامعة الملك عبدالله للعلوم والتقنية

Gas valves, manifolds and regulators

Purpose of the safety bulletin: Inform the research community about the use of manifolds and regulators and emergency procedures in case of gas leaks.

- Make sure all fittings and connections threads meet properly according to the CGA number. Standard CGA connections reduce the chance of mixing incompatible gases and possible leaks.
- Do not use PTFE tape on the valve threads. PTFE tape, oil, or any other lubricant should not be used on the inlet connection of a regulator. PTFE tape can shred, and fluid lubricants will find their way into the flow stream; neither should be inside the regulator.
- Never cross-thread or use adapters between equipment and cylinders.
- Never apply excessive force when trying to open valves.
- Never allow flames or concentrated heat sources to come in contact with a gas cylinder.
- The regulator fitting and the regulator itself should be checked thoroughly for leaks each time they are attached for use.
- Regulators should be dedicated to a single gas service. If it is necessary to change service and redeploy a regulator, that regulator should be appropriately cleaned prior to reuse.
- If one of the gauges on a regulator appears to be stuck or malfunctioning, it should be assumed that there is a damaged component in the regulator.
- Make sure gas bottles are connected to the respective manifolds or gas panels. e.g. Flammable gases should not be connected with inert gas manifolds.
- Any change from the original design has to go through MoC process and approved by HSE.
- If you need assistance on how to use manifolds, questions about gas cylinder regulators or use of valves please contact fchelpdesk@kaust.edu.sa and a expert in compressed gases from campus support will assist you.
- For questions related to safety please contact: researchsafety@kaust.edu.sa

Compressed Gas Safety Training is available in Blackboard.

For more information please consult KAUST Lab safety manual and KAUST Compressed gas standard.

Emergency procedure

Despite strict adherence to laboratory safety practices, accidents involving gases may occur in the laboratory. The amount of damage sustained by personnel and property from these accidents will be directly related to the quality of the laboratory's emergency plan and procedures. Users of compressed gas cylinders must be familiar with necessary safety precautions.

Minor Leaks

Occasionally a gas cylinder or one of its component parts may develop a leak. Most of these leaks occur at the top of the cylinder in areas such as the valve threads, pressure safety device, valve stem and valve outlet. The following information applies to the remediation of minor leaks:

If possible, verify suspected leaks using a gas detector or soapy water solution. If the leak cannot be stopped by tightening a valve gland or packing nut, emergency action procedures should be initiated by calling 911 from a campus phone or 012-808-0911 from a mobile phone.

Major Leaks

In the event of a large gas release or if an accident takes place in which readily available personal protective equipment (PPE) is inadequate to ensure worker safety, activate the following Emergency

Immediately call 911 from a KAUST landline or 012-808-0911 from a mobile phone and report the incident.

Activate building and area fire alarms (or chemical safety alarms if applicable). Evacuate the area, securing entrances and providing assistance to others on the way out.

Provide emergency response officials with details of the problem upon their arrival. The KAUST Fire Department will respond to gas emergencies.

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