

COVID-19 Readiness: Bulk Hospital Vaporizer Guidance

Scope:

For medical oxygen systems where existing vaporizers may be overdrawn due to increased patient loads resulting in excess ice accumulation.

Description:

Medical bulk oxygen supply systems consist of a liquid oxygen tank and ambient vaporizers that convert the liquid to gas. These vaporizers were sized based on the original design criteria. As flow demands increase the vaporizers will accumulate ice as a part of normal operation. Under circumstances of high flow demand, the vaporizer ice accumulation may grow to levels that will reduce its capacity. These situations need to be addressed in order to continue operation at these high demand levels.

Existing Vaporizer Evaluation and Monitoring:

Hospitals should visually inspect the vaporizers on the system to check their level of icing daily. Based on current and expected oxygen demands, continue monitoring the vaporizers daily and contact Airgas if the accumulation exceeds 50% of the unit (see pictures below). Additionally, contact Airgas immediately if frost is noticed on piping entering the building.

Potential Mitigations:

If the situation requires mitigation, collect the following information and contact Airgas to discuss steps for alleviating the condition and improving capacity and performance. The following details will help determine options for addressing the situation:

- Estimated % of Vaporizer is covered in Ice
- Current and Expected O₂ Demand (cf/hour and/or cubic feet per month)
- Availability of steam to the bulk system (Y/N)
- Availability of water to the bulk system (Y/N)
- Availability of power for fans to the bulk system (Y/N)
- Digital photos of current system
- Keep emergency oxygen supply connection (EOSC) area clear

Upon discussion with Airgas, one or more mitigation methods will be planned and implemented. Additional details will be collected if equipment upgrades are deemed necessary.

Warnings:

- Never hammer on the ice as that may cause a hazard due to falling ice or potentially damaging the equipment
- Portable heaters shall not be used on oxygen systems

Reference Photos:

Normal ice buildup



50% ice buildup (contact Airgas)



Vaporizers that are more than 50% iced (contact Airgas)

