

## LIQUID NITROGEN SAFETY GUIDELINES AND FAQs

### Know Your Liquid Nitrogen Dewars

Also referred to as a Vertical Gas Liquid (VGL) Cylinder or Tank.

#### Pressure Color Codes

Ensure you select the correct pressure for your application. If incorrect, return to the vendor and do not use adapters. Vendors typically engrave the pressure rating on the brass of the pressure relief device or use the following color code scheme for identification.

- Yellow: 22 psi
- Blue: 230 psi
- Orange: 350 psi
- Red: 550 psi

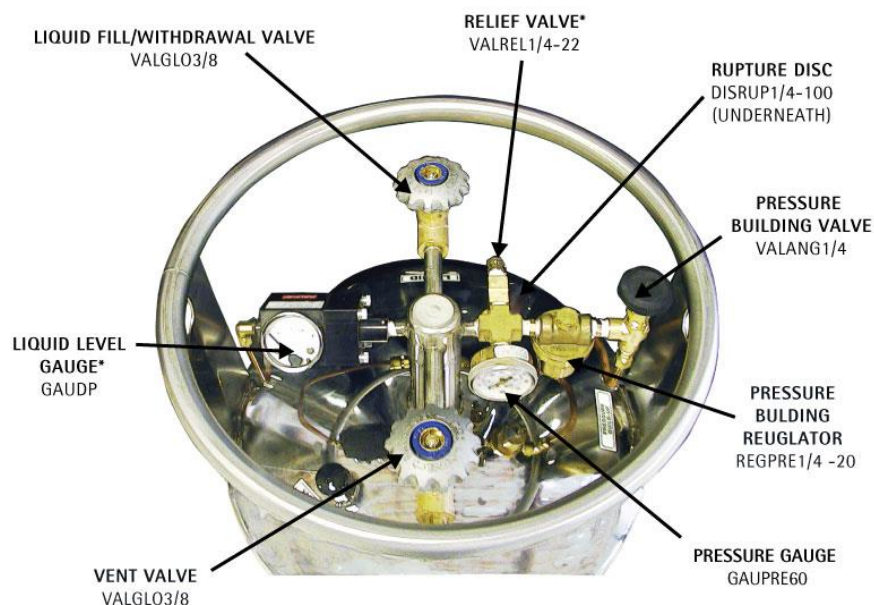
#### Moving the Dewar Safely

- A 240L, 22 psi tank can weigh over 700 pounds. Handle with care.
- Always PUSH the tank slowly using two hands on the handles or halo.
- Avoid pulling the tank or standing in its movement path.
- Be cautious of wheel positioning when crossing door jams or uneven surfaces.
- Expect occasional venting during transport (normal due to liquid agitation).

### Understanding the Valve System

#### Valve Functionality

Valves are either fully open or fully closed. They do not regulate pressure.



\* Other settings available

Source: <https://www.cryofab.com/products/parts/liquid-nitrogen-tank-parts-and-accessories/>

## Frequently Asked Questions

### What Do the Numbers on the Gas Valves Mean?

Valves are numbered to prevent mixing gases. Nitrogen gas valves are numbered 580, and liquid valves are numbered 395.

### What if the Tank Vents Excessively?

Venting every ~15 minutes is normal. If more frequent:

- Cause 1: Ice buildup in the relief valve.
  - Solution: Pour warm water over the valve.
- Cause 2: Pressure builder left open.
  - Solution: Close the valve and allow the pressure to stabilize.

### What Does the Pressure Building Valve Do?

The pressure building valve vaporizes liquid nitrogen to increase pressure. After opening, wait ~30 minutes before use. Close the valve to prevent overpressure and venting.

### Should I Adjust the Pressure Release Valve (PRV)?

No. The PRV prevents overpressure and should not be manually adjusted.

### What if There is Ice Buildup on the Tank?

- Active use or venting: Ice is normal.
- No active use: Move the tank to the loading dock and contact the vendor if an ice block forms.

### What if a Dewar Falls Over?

Let it fall to avoid injury. Notify Yale EHS for assistance in safely returning it to a vertical position.

### Can I Use a Dented Tank?

Yes, as long as there is no cold spot on the exterior, indicating interior damage.

### Why Does a Tank Have Two Relief Valves?

The tank supports two pressure settings (e.g., 22 psi and 230 psi). These are set during ordering and should not be adjusted.

### What if I Order the Wrong Pressure?

Return the tank to the vendor immediately. High-pressure tanks can be hazardous and extremely loud.

## Additional Resources

- [Airgas Troubleshooting Dewar Issues](#)
- [Yale Cryogen Use and Storage Safety Guidelines](#)

Contact EHS at [ehs@yale.edu](mailto:ehs@yale.edu) or 203-785-3550 with any questions or concerns.