

Lecture Bottle Alternative Frequently Asked Questions

Notes:

Several suppliers supply solvents saturated with ammonia, hydrogen chloride, or other gases. These reagents may be suitable replacements for lecture bottles or any gas cylinders when used in small quantities. Sigma-Aldrich, for example, sells 2.0 M, 7.0 N and 28% solutions of ammonia in ethanol, methanol, and water, respectively. HCl gas is also available in dioxane or diethylether solutions.

Liquid ammonia is made available in a returnable cylinder as it is used as the solvent in some reactions.

Please consult the [SDS sheets](#) before checking out any chemicals from the stockroom, and discuss the experiment with your lab supervisor.

•Where can I get a cylinder of a pressurized gas other than a lecture bottle?

The DSS has 2 pound bottles of anhydrous ammonia gas. The customer purchases only a pound or ½ pound of gas that is used and returns the capped cylinder, stand and purged regulator to the Dietrich School Scientific Stockroom.

If you plan to use an entire cylinder of gas on a regular basis you can purchase your own regulator and stand, and then rent the gas cylinder directly from Matheson via the PantherExpress System.

The returnable gas cylinders are available for purchase directly from Matheson. The regulators are also available for purchase directly from Matheson. The University's information for contracted supplier Matheson: <http://www.cfo.pitt.edu/pexpress/documents/matheson.pdf>.

•How do I know how much gas I used and will need to purchase from the Dietrich School Scientific Stockroom?

The scale on the Chevron Science Center dock can be used to weigh the cylinder before and after removing gas from the cylinder. Then the weight of gas obtained can be calculated as the difference and paid for.

•How do I purge the regulator?

A regulator should be purged at a higher outlet pressure setting so that any residual corrosive gas is expelled from the regulator.

We recommend using dry compressed nitrogen to flush the regulator for more 30 minutes.

•What size of cylinder is this? I only want a small amount of gas?

These cylinders are small enough for placement inside the chemical fume hood while they are being used.

•What gases are available?

Currently anhydrous ammonia gas is available. The tank has an educator tube / dip tube to remove the liquid from the cylinder.

Upon request more gases may be added to the DSS, please let us know what gas you are looking for to aid in your research. The request will be reviewed by the Safety Committee.

Reagents are available from suppliers containing solvents saturated with gas. These reagents may be suitable replacements for lecture bottles or any gas cylinders used in small quantities.

Liquid ammonia is made available in a returnable cylinder as it is used as the solvent in some reactions.

•What grade of gas is available?

Generally the 99.5 to 99.9% gases are available in returnable tanks; similarly the highest purity gases are usually not available in lecture bottles.

As a safety reminder please transport the cylinder with the regulator removed, and the cap affixed on an appropriate gas cylinder cart, via the freight elevator.

Please use the cylinder in a certified chemical fume hood while using the stand to hold it upright. Secure all flasks that are connected to the cylinder.

•Where can I obtain the gas cylinder?

Provide a note or e-mail message from the lab supervisor before purchasing the gas through the PantherExpress System. The gas cylinder and stand are available from the cage on the inside of the loading dock. The Chevron Science Center loading dock is on the 2nd floor. The lock combination is listed in the stockroom Gas Cylinder(Safety Net) Hotlist Title. Enter the code then push up on the bottom of the lock to open the cage. Then weigh the cylinder with the scale on the floor of the Chevron loading dock. Enter you Matheson customer number on the log attached to the Cylinder cage. A unit of gas needs to be purchased in the PantherExpress System before obtaining the cylinder.

The gas regulator is available during normal business hours and may be collected from the DSS upon request.

•How long will I be able to keep the cylinder?

A one week period should provide enough time to conduct the envisioned synthetic steps. In the event there is greater demand for a particular item you may be contacted sooner by the DSS inquiring when the item will be returned.

•What if I do not return the cylinder, regulator, and/or stand?

The DSS will e-mail the customer and if the item is not returned in 30 days it will be charged to the customer's research account number. Once the DSS has given the customer time to respond the DSS will assume the material will be kept by our customer. In the case of the gas cylinder, only the remainder of the gas will be billed, and the customer's gas tracking "U"-number will be given to Matheson to track their returnable cylinder. Then the DSS will purchase replacement material to have it ready for future research needs.

•How should I transport the cylinder to my lab?

All cylinders should be transported on a cylinder cart. A free cart is available for use when transporting the cylinder to your laboratory. Please return the cart to the cylinder cage area. You should transport cylinders in the freight elevator, just like we do with all chemical reagents. The freight elevator is the large elevator closest to the DSS. The cylinder should have the regulator removed and its cap secured.

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