

Handling Pyrophoric Reagents

revised 6/95



Fig. 1 Pyrophoric reagents may be packed in a variety of containers.

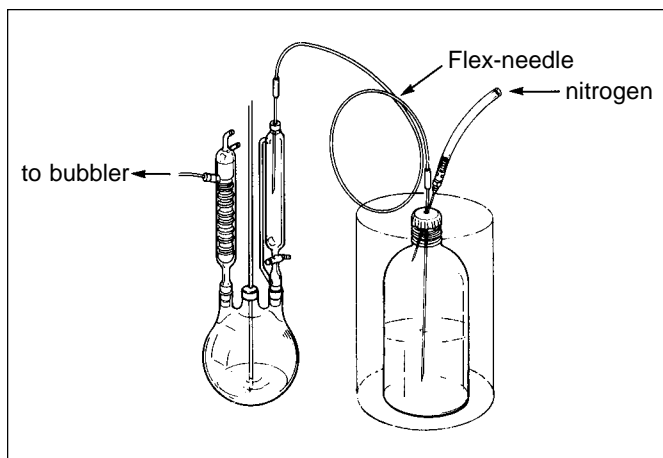


Fig. 2 Double-tipped needle transfer of pyrophoric liquid.



Fig. 3



Fig. 4

NOTE: The metal can in which each bottle is shipped should be retained as a protective container for transporting and storing the bottle of reagent.

I. INTRODUCTION AND PRECAUTION

Due to the hazardous nature of pyrophoric reagents, we strongly recommend that all users read this bulletin carefully and completely before starting any actual laboratory work. If you are unsure of any of these procedures or if you need assistance, please contact us prior to use.

All users of these reagents must be fully qualified and experienced laboratory workers to handle pyrophoric reagents without problems. All users must be made aware of the very hazardous nature of these products.

Users must have read and understood our Technical Information Bulletin No. AL-134 which describes standard syringe and double-tipped-needle transfer techniques before attempting to handle liquid pyrophoric reagents (see Fig. 2).

II. NATURE OF THE REAGENTS

Pyrophoric reagents are extremely reactive toward oxygen and in most cases, water, and must never be exposed to the atmosphere. Failure to follow proper handling techniques could result in serious injury. Exposure of these reagents to air could result in spontaneous combustion, which could cause serious burns or other injuries to the person handling the reagent or others in the immediate area.

In addition, all combustible materials, including paper products, should not be allowed to come in contact with any pyrophoric reagent at any time.

III. HANDLING

Pyrophoric reagents can be handled and stored safely as long as all exposure to atmospheric oxygen and moisture is avoided. Solids must be transferred under an inert atmosphere in an efficient glove box. Liquids may be safely transferred without the use of a glove box by employing techniques and equipment discussed in our Technical Information Bulletin AL-134.

Again, users must have read and understood the accompanying Technical Bulletin AL-134 (call us immediately for a copy if yours has been misplaced), before attempting to handle liquid pyrophoric reagents.

Glass bottles of pyrophoric reagents should not be handled or stored unprotected. The metal can shipped with each bottle should be retained as a protective container for each bottle for transporting and storage (see Fig. 3 and 4).

(OVER)

IV. SPILL

Powdered lime should be used to completely smother and cover any spill that occurs.

A container of powdered lime should be kept within arm's length when working with a pyrophoric material.

IV. DISPOSAL

We feel that the user of the reagent is the person most familiar with the contents and should accept the responsibility for safe disposal of the empty container.

A container with any residual material **MUST NEVER** be opened to the atmosphere. The last traces of reagent must be removed and should be used completely for a chemical reaction; however, if unused and unwanted material must be destroyed, it must be transferred to an appropriate reaction flask for hydrolysis and/or neutralization with adequate cooling.

The essentially empty container is then rinsed three times with an inert dry solvent; this rinse solvent must also be neutralized or hydrolyzed. The solvent must be added to and removed from the container under an inert atmosphere. After adding each rinse, the container is swirled or shaken. The best solvent to use is the same solvent used for the solution of the original reagent. If the container originally contained a **neat reagent, then use a solvent which is completely inert and unreactive toward the reagent.**

After the triple rinse is complete, the container is opened to the atmosphere at a safe location, preferably outdoors or, **AT A MINIMUM, IN THE BACK OF A HOOD.** After allowing the container to be exposed to the atmosphere for at least a week, the container must be triple-rinsed with water before disposal.

This hazard sheet must remain with the container at all times. If you have any questions, please contact us.

AtmosBag—A controlled-atmosphere chamber



Two-hand AtmosBag shown here with Benchrack lattice system.

The Aldrich AtmosBag is a 0.003-in. gauge PE bag that can be sealed, purged, and inflated with an appropriate inert gas, creating a portable, convenient, and inexpensive "glove box" for handling air- and moisture-sensitive, as well as toxic, materials. Other applications include dust-free operations, controlled-atmosphere habitat, and, for the ethylene oxide-treated AtmosBag, immunological and microbiological studies. Small AtmosBags have one inlet per side. Includes instructions.

Accessories

Sealing tape

PP, 3in. x 60yd. **Z10,692-5**

Bench-top base

Rigid PE, ½ in. thick. Keeps AtmosBag in place. Fits inside respective bag.

S 11 x 16in. **Z11,286-0**
 M 20 x 16in. **Z11,285-2**
 L 24 x 34½ in. **Z10,691-7**

Cotton glove liners

Medium weight 100% cotton form fitting, disposable style. Ambidextrous. Each package contains 12 pairs. 8in. L.
 S/M **Z11,833-8**
 M/L **Z11,834-6**

Lattice rods

Aluminum. ⅝ o.d. x 11¾ in. L. Sections screw together for extra height. **Z22,566-5**

Two-hand AtmosBag

Size	Uninflated dimensions (in.)			Inflated volume (in. ³)	Cat. No.	Ethylene oxide-treated Cat. No.
	Opening	Width	Length			
S	12	27	30	3,000 (50L)	Z11,283-6	Z11,837-0
M	24	39	48	17,000 (280L)	Z11,282-8	Z11,836-2
L	36	51	58	32,000 (520L)	Z10,608-9	Z11,835-4

CAUTION: Always handle toxic materials in a hood or other controlled system to prevent and protect against exposure in case of leakage. All products made of PE may tear, break, or puncture. To assure that air-sensitive materials do not become exposed to air, follow instructions on package; also test and monitor AtmosBag for leaks before and during use.

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