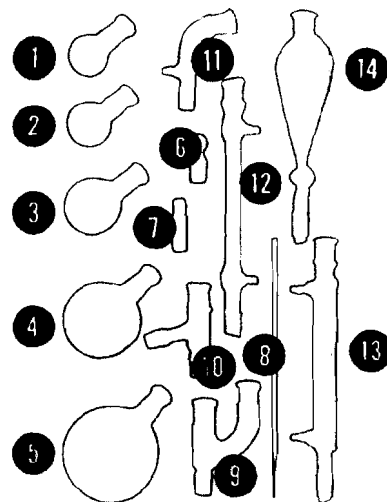
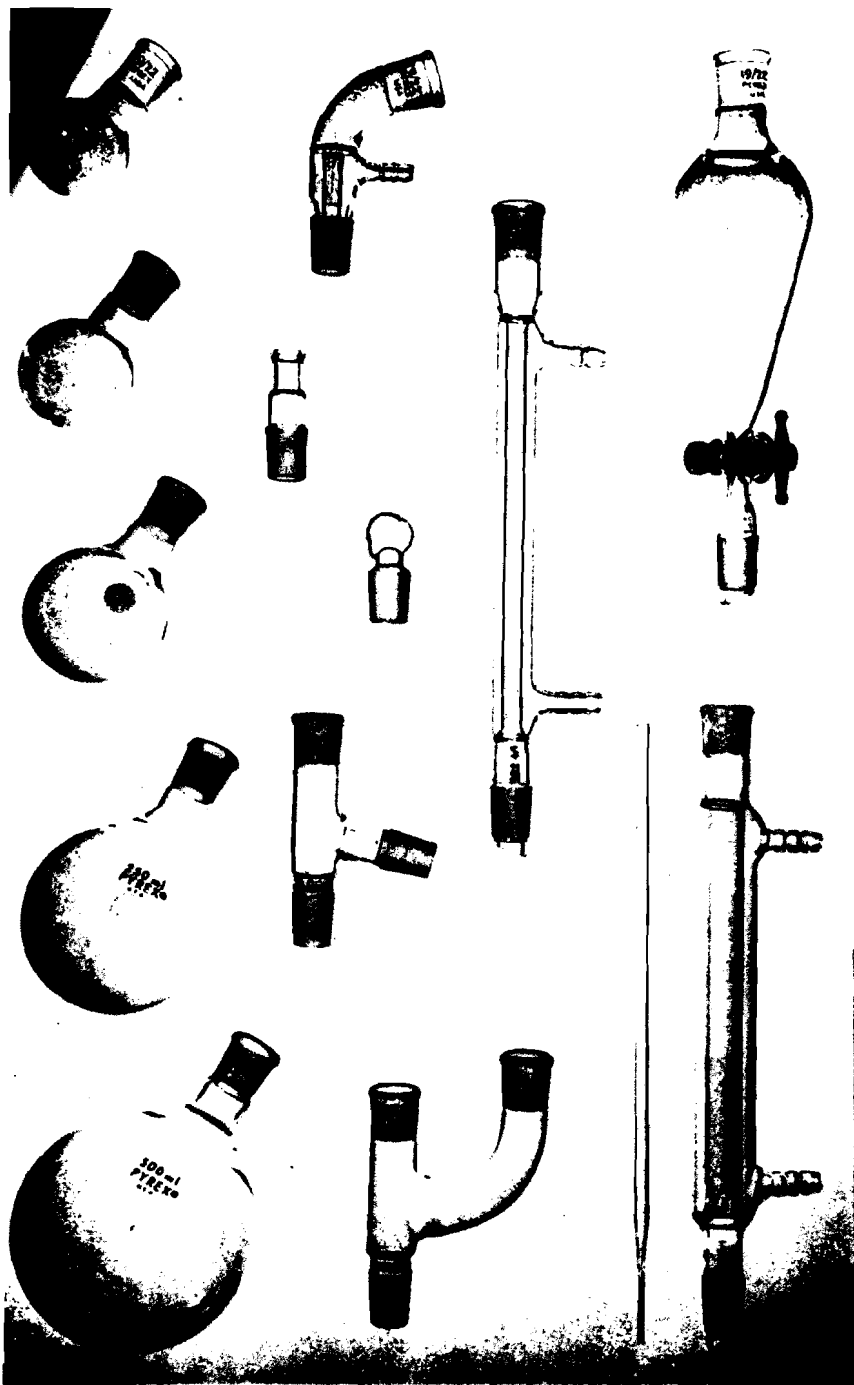


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Corning Laboratory Products
Department
Corning Inc.

CORNING
LABORATORY PRODUCTS



Description

1. R.B. Boiling Flask 25 ml
2. R. B. Boiling Flask 50 ml
3. R. B. Boiling Flask 100 ml
4. R.B. Boiling Flask 250 ml
5. R.B. Boiling Flask 500 ml
6. Hollow Stopper
7. Tube, Adapter, Straight, with Thermometer Opening
8. Tube, Bleed
9. Tube, Connecting, Claisen
10. Tube, Connecting, Three-Way
11. Tube, Connecting, Vacuum
12. Condenser, West, 200 mm
13. Distilling Column 200 mm
14. Funnel, Separatory, Addition, Pear Shape, 125 ml

For use with CORNING® Organic Chemistry Kits
Nos. 6949E, F and G - 19/22 Components

Professional laboratory glassware deserves professional care.

The components in your CORNING Organic Chemistry Kit carry the PYREX® brand trademark, a symbol that has been the recognized standard in laboratory glassware for almost half a century.

This ware is designed and made to give you fine performance and long, long service. You can help insure this service by observing a few simple rules in its care and handling.

In an apparatus assembly kit, as you can readily understand, it is important to preserve the surfaces of the ground joints to keep them completely interchangeable. The suggestions which follow will help you do this.

Care of ground surfaces

You'll find that the basic protective measure you can take for ground joints is to lubricate them.

Lubrication protects the surface of the joint, makes it easy to separate ground joint ware, and prevents leakage.

To do these three things, whatever lubricant you use must stay in place on the joint. In practice, you often will use the apparatus under conditions that no one lubricant can withstand—high temperatures, high vacuum, and/or chemical reaction.

Therefore, your choice of a lubricant will depend on the conditions the ground-joint ware will be subjected to, the material the ware will contain, and the effect that these conditions and materials may have on the lubricant.

In using lubricants, it is advisable to apply a light coat of grease completely around the *upper* part of the joint. Use only a small amount and avoid greasing that part of the joint which contacts the inner part of the apparatus.

Grease is a mixed blessing to the organic chemist—it helps keep ground joints from freezing, but it is also a po-

tential source of contamination.

To prevent contamination, you should always clean ground joints thoroughly when you disassemble apparatus, so they will be ready for their next use. Also, if you want to pour a liquid from a flask during an experiment, be sure the joint of the flask is free of grease.

Three types of lubricant are commonly used on standard-taper joints.

A hydrocarbon grease is the most widely used. It can be easily removed by most laboratory solvents, including acetone.

Because hydrocarbon grease is so easily removable, silicon grease is often preferred for higher-temperature or high-vacuum applications. It can be readily removed with chloroform.

For long-term reflux or extraction reactions, you probably will want to use a water-soluble, organic-insoluble grease. The most common of these contain sugar, ground finely in glycerine. Water will do the cleaning job.

Under any laboratory conditions, you will find that the precision grinding of PYREX brand joints gives you greater freedom from freezing problems.

Assembling and clamping apparatus

The basic rule of thumb is this: use as few clamps as possible and adjust them to accommodate the apparatus.

You can see the reason for this in the precise taper and fit of the ground joint components. There is little latitude for error in alignment.

The joints themselves provide substantial mechanical support and rigidity. This lets you use only as many clamps as are dictated by common sense and safety.

If possible, receiver flasks and similar components should be supported from below by ring stands, rather than by clamps at the neck.

It is usually best to decide roughly where you will need clamps and position them approximately on the ring stand. Then assemble your apparatus from the bottom up—fastening all clamps loosely except for the bottom-most clamp,

which should be tightened.

Then adjust the clamps to accommodate the apparatus as it goes into place. And, finally, tighten the clamps when your alignment is proper.

You can assemble the most complicated array possible with the CORNING kit quite easily on a standard 36-inch ring stand. The maximum height of any assembly with the kit components is just 31 inches.

The standard-taper outer joints clamp most easily with an eight-inch "C" clamp. The longer, cylindrical components can be clamped with three-finger or universal clamps.

You will notice that all the joints through which a liquid will pass in normal use have been beveled at the lower end. This "drip-tip" construction channels the liquid to the lowest point of the joint before it falls into the next component. The reason for this construction is to keep the joint itself free of liquid.

In assembly, you should be sure to position any component that is not normally vertical so the tip of the bevel is at the lowest possible point. This permits the drip tip to function properly.

Cleaning and storage

One more rule: clean your apparatus immediately after use.

The reason is simply that it's far easier to clean the components before the residues in them dry and harden.

A word of caution here on the general handling of round-bottom flasks: don't set them down on a hard, flat surface, especially if they are full, while holding them by the neck.

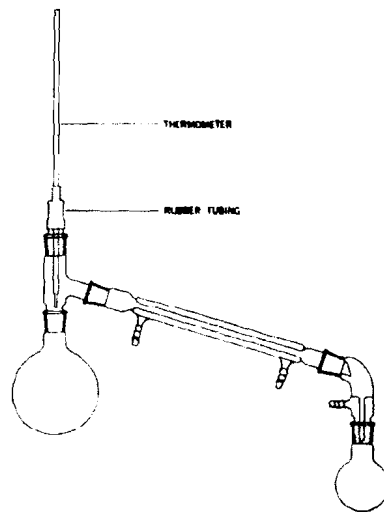
Even gentle contact in this form can generate a lot of pressure and cause a star crack in the flask body. These are difficult to see in a wet flask.

Since any cracked apparatus is a hazard in a laboratory, you should examine the bottom of every flask carefully before each use, especially if it is to be used in a vacuum apparatus.

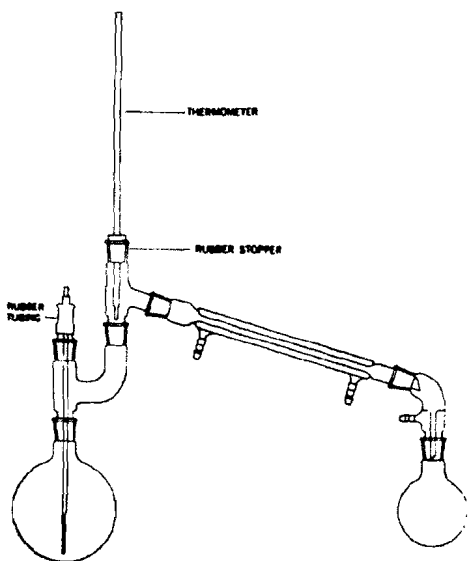
Whenever possible, place round-bottom flasks only on ring stands or in a cork ring support.

Remember: professional laboratory glassware deserves professional care.

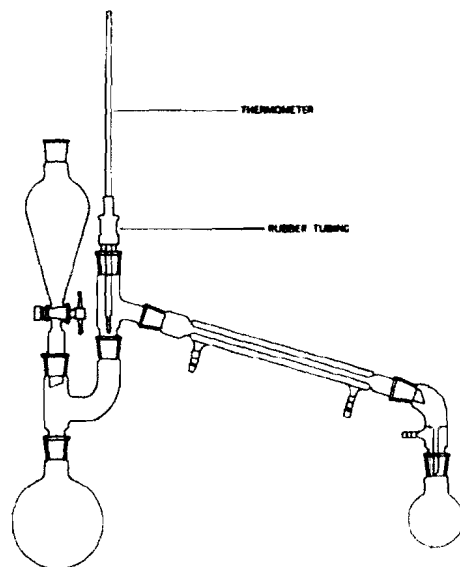
How to suggestions



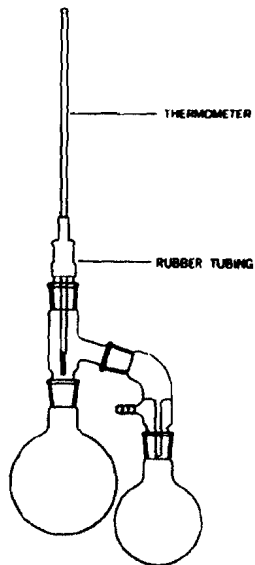
1 Distillation, simple, atmospheric pressure or vacuum.



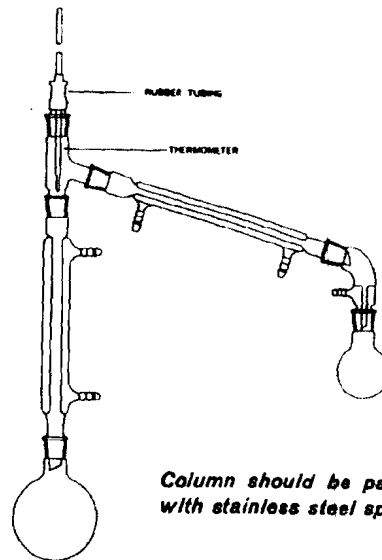
4 Steam distillation, or vacuum distillation with gas capillary bubbler



5 Concentration of a solvent or extract, vacuum or atmospheric pressure

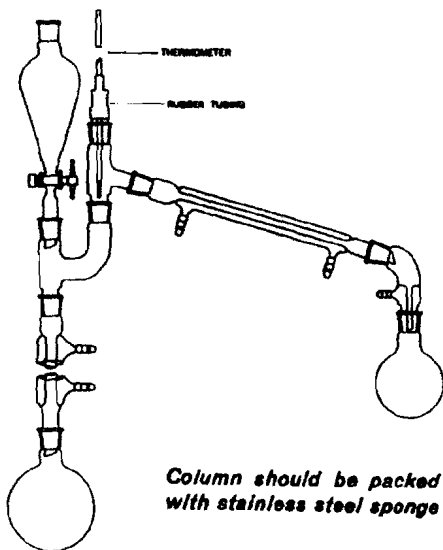


2 Distillation of viscous or high boiling liquids or solids.



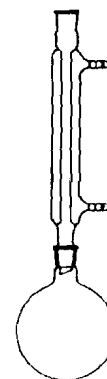
Column should be packed with stainless steel spon

3 Fractional distillation, vacuum or atmospheric pressure

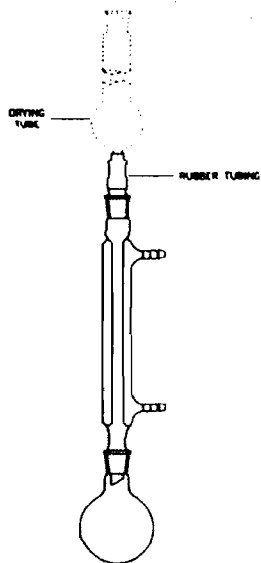


Column should be packed with stainless steel sponge

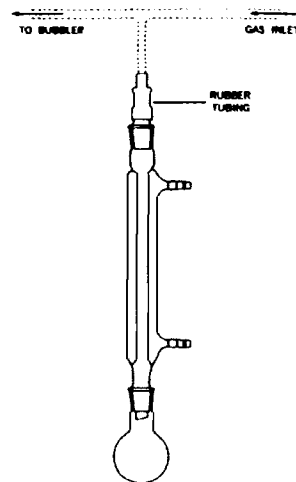
6 Concentration of a solvent or extract, with fractional distillation, vacuum or atmospheric pressure



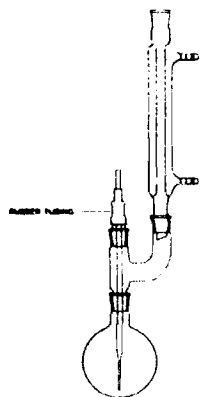
7 Simple reflux



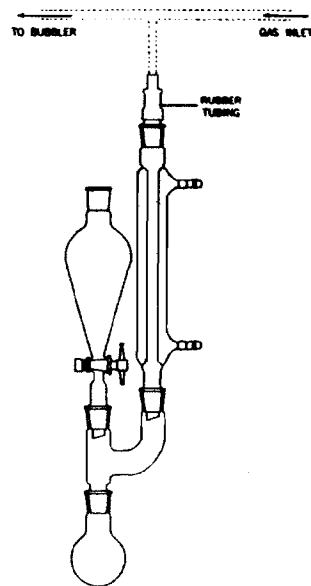
8 Simple reflux, dry atmosphere



9 Reflux, inert atmosphere



12 Gas inlet and reflux



13 Addition and reflux, inert atmosphere