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EISCO CH200501

EISCO Complete Vacuum Filtration Kit User Manual

Model: CH200501

INTRODUCTION

The EISCO Complete Vacuum Filtration Kit provides all necessary components for efficient separation of solids from liquids using vacuum assistance. This kit is designed for laboratory and educational use, offering a faster alternative to traditional gravity filtration methods. It is suitable for various applications requiring solid-liquid separation.



Image: The complete EISCO Vacuum Filtration Kit, showing the filtering flask, Buchner funnel, hand vacuum pump, and tubing assembled.

KIT COMPONENTS

This kit includes the following components, carefully packaged in a protective foam insert:

- **500mL Glass Filtering Flask:** A heavy-walled flask with a sidearm for vacuum connection.
- **Hand-held Vacuum Pump with Gauge:** Used to create the vacuum necessary for filtration.
- **4" Diameter PP Buchner Funnel:** A polypropylene funnel designed for vacuum filtration, used with filter paper.
- **100 x 9cm Filter Papers:** Circular filter papers specifically sized for the Buchner funnel.
- **35" Flexible Tubing:** Connects the filtering flask to the vacuum pump.
- **1-Hole Rubber Stopper:** Provides a seal between the Buchner funnel and the filtering flask.



Image: A labeled diagram illustrating each component of the vacuum filtration kit, including the Buchner funnel, rubber stopper, filtering flask, hand vacuum pump, flexible tubing, and filter paper.



Image: The EISCO Vacuum Filtration Kit components neatly organized within their protective foam insert, as received in the packaging.

SETUP INSTRUCTIONS

Follow these steps to properly set up your vacuum filtration kit:

1. **Prepare the Filtering Flask:** Place the 500mL glass filtering flask on a stable, flat surface.
2. **Insert the Rubber Stopper:** Carefully insert the 1-hole rubber stopper into the neck of the filtering flask, ensuring a snug fit.
3. **Attach the Buchner Funnel:** Insert the stem of the 4" diameter PP Buchner funnel into the hole of the rubber

stopper. Ensure it is seated firmly.

4. **Place Filter Paper:** Select one 9cm filter paper and place it flat inside the Buchner funnel, covering all the holes at the bottom. You may wet the filter paper with a small amount of solvent (compatible with your solution) to help it adhere to the funnel and create a better seal.
5. **Connect Tubing to Flask:** Attach one end of the flexible tubing to the sidearm of the filtering flask.
6. **Connect Tubing to Vacuum Pump:** Attach the other end of the flexible tubing to the inlet port of the hand-held vacuum pump. Ensure all connections are secure to prevent vacuum leaks.



Image: The EISCO Vacuum Filtration Kit fully assembled, demonstrating the correct connection of the flask, funnel, tubing, and hand vacuum pump.

OPERATING INSTRUCTIONS

Once the kit is set up, follow these steps for effective vacuum filtration:

1. **Secure the Setup:** It is recommended to secure the filtering flask with a clamp to a retort stand to prevent it from tipping over during filtration, especially when the flask contains liquid or when vacuum is applied.

- 2. Apply Vacuum:** Begin pumping the hand-held vacuum pump. Observe the gauge to monitor the vacuum level. Continue pumping until a sufficient vacuum is established (typically indicated by the gauge reaching a stable negative pressure).
- 3. Pour Solution:** Slowly pour the mixture to be filtered into the Buchner funnel. Ensure the liquid level does not exceed the top edge of the filter paper. The vacuum will draw the liquid (filtrate) through the filter paper and into the flask, leaving the solid (residue) on the filter paper.
- 4. Wash Solids (Optional):** If desired, wash the collected solids by pouring a small amount of appropriate solvent over them while maintaining the vacuum.
- 5. Release Vacuum:** Once filtration is complete, or if you need to stop, release the vacuum by pressing the release valve on the hand-held vacuum pump. Do not disconnect the tubing or funnel while under vacuum.
- 6. Collect Filtrate/Residue:** Carefully remove the Buchner funnel from the flask. The filtrate can be poured from the flask, and the solid residue can be collected from the filter paper.

MAINTENANCE

Proper maintenance ensures the longevity and performance of your kit:

- **Cleaning Glassware:** After each use, thoroughly clean the filtering flask and Buchner funnel with appropriate laboratory detergent and rinse with distilled water. Ensure all residues are removed.
- **Drying:** Allow all components, especially the glassware, to air dry completely or dry in an oven (if suitable for glassware) before storage.
- **Vacuum Pump Care:** Wipe the hand-held vacuum pump with a damp cloth. Do not immerse the pump in water. Store it in a dry place.
- **Tubing and Stopper:** Rinse the flexible tubing and rubber stopper with water. Ensure they are dry before storage to prevent mold or degradation.
- **Storage:** Store all components in their original protective foam insert and box to prevent damage and keep them organized.

TROUBLESHOOTING

Here are some common issues and their solutions:

Problem	Possible Cause	Solution
No or Weak Vacuum	Loose connections; damaged tubing/stopper; improperly seated filter paper; clogged pump.	Check all connections for tightness. Inspect tubing and stopper for cracks or damage and replace if necessary. Ensure filter paper is flat and covers all holes. Check pump for obstructions.
Liquid Not Filtering	Filter paper clogged; insufficient vacuum; solution too viscous.	Replace filter paper. Increase vacuum by pumping more. Dilute the solution if possible, or consider using a different grade of filter paper.
Solids Passing Through Filter	Filter paper too porous; filter paper not covering all holes; torn filter paper.	Use a filter paper with smaller pore size. Ensure filter paper is correctly seated and undamaged. Replace torn filter paper.
Flask Tipping Over	Unstable surface; no clamping.	Always place the flask on a stable, level surface. Use a retort stand and clamp to secure the flask during operation.

SPECIFICATIONS

- **Model Number:** CH200501
- **Filtering Flask Volume:** 500mL
- **Buchner Funnel Diameter:** 4 inches (Polypropylene)
- **Filter Paper Size:** 9cm diameter (100 sheets included)
- **Tubing Length:** 35 inches
- **Kit Dimensions (Packaged):** 13.8 x 11.25 x 5.25 inches
- **Kit Weight (Packaged):** 2.29 Pounds
- **Manufacturer:** Eisco

WARRANTY AND SUPPORT

For warranty information, technical support, or replacement parts, please contact EISCO customer service. Refer to the product packaging or the official EISCO website for the most current contact details.

EISCO Official Website: www.eisco.com

