

Density Gradient Vial Chiller

Revolutionizing Laboratory Efficiency and Safety



In many laboratories, the traditional method for keeping vials cold involves using buckets of ice. This method is not only inefficient but also poses various safety and contamination risks. The Density Gradient Vial Chiller is an innovative solution designed to address these issues while offering a more efficient, safer, and space-saving alternative.



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Engineered and Manufactured in compliance with ISO 9001:2015 certified guidelines

Current Challenges with Ice Buckets

1. **Dirty and Contaminated Environment:** Ice buckets can introduce contaminants into the laboratory environment, compromising the integrity of samples.
2. **Safety Hazards:** Spilled ice and water create slippery surfaces, increasing the risk of accidents and injuries.
3. **Space Consumption:** Ice buckets take up valuable bench space that could be used for other critical equipment.
4. **Dependence on Ice Machines:** Laboratories must rely on ice machines, which are costly to maintain and can be a source of contamination.
5. **Manual Handling Risks:** Using syringes with vials held by hand is hazardous, increasing the risk of needle pricks and contamination.

Benefits of the Vial Chiller

1. **Enhanced Accuracy:** The Vial Chiller includes an interchangeable graduated plexiglass plate, providing a precise method for measuring various density gradients (e.g., sucrose, Percoll, cesium chloride). This increases the accuracy of sample preparations.
2. **Time Efficiency:** Traditional methods of loading ultracentrifuge tubes can take 30 to 45 minutes. The Vial Chiller reduces this time to under 10 minutes, significantly enhancing laboratory productivity.
3. **Cost-Effective:** By eliminating the need for expensive automatic fractionation equipment, which is a costly investment, the Density Gradient Vial Chiller is an economical alternative.
4. **Compact and Portable:** Its smaller footprint saves valuable lab space and is portable which allows for easy relocation within the laboratory.

Functional Design

The Density Gradient Vial Chiller is designed to provide a more effective way to measure various types of density gradients prior to ultracentrifugation.

Key components include:

- **Anodized Aluminum Tube Stand:** Durable and resistant to corrosion
- **Cooling Block:** Ensures samples remain cold (4°C) during sample preparation
- **Six 13mm Tube Stations:** Allows for simultaneous preparation of multiple samples
- **Graduated Removable Plexiglass Plate:** Offers precise measurement and easy gradient loading



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Features

- **Rapid and Accurate Measurement:** Enables quick and precise preparation of density gradients (sucrose, Percoll, cesium chloride) before ultracentrifugation
- **Safety Features:** Perforated openings at the back for safe removal of particles with a syringe, preventing needle pricks and potential infections
- **Customizable:** Available with different graduated dimension plates to suit various laboratory needs
- **Durable Construction:** Made from anodized aluminum or other metallic alloys to prevent corrosion and ensure longevity
- **Cooling block** can be autoclaved after removing cooling pack and plexiglass plate

Target Markets

- Hospitals
- Medical and Diagnostic Laboratories
- Research and Development Laboratories
- Testing Laboratories

Inspiration for the Invention

The Density Gradient Vial Chiller was inspired by the need for a more efficient and accurate method for preparing sucrose gradients. The inventor's frustration with the tedious traditional process led to the development of a device that offers precision and speed, enhancing laboratory workflows. Patent No: US 10,029,260 B2

Conclusion

The Density Gradient Vial Chiller is a game-changer for laboratories, providing a clean, safe, and efficient solution for keeping vials cold. By improving accuracy, saving time, and reducing costs, it addresses the key challenges faced by laboratories today and sets a new standard in sample preparation.

Finneran #	Description
GD-PCM-6	Density Gradient Vial Chiller. Includes (1) Vial Rack, (1) Cooling Pack, and a Stand



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