

*New*

# VirTis® Benchtop™ Shell Bath Freezer...



## Efficient, Convenient, and Easy to Use System for Prefreezing Samples for Lyophilization

- Offers simple and safe method for unattended prefreezing multiple flasks at one time—accommodates two each 1200 mL flasks and up to four each 40 mL flasks
- Produces a thin frozen coating inside flask, permitting a greater volume of material to be quickly processed during each freeze-drying cycle—available in either -45°C or -70°C to handle the widest range of samples
- Microprocessor controlled for separate refrigeration, flask rotation, and timer control—compact design for benchtop operation
- Enables two coating options:
  - Cylindrical coating which provides the highest surface to volume ratio of sample to be freeze dried
  - Conical coating which permits larger sample size processing



The new VirTis Benchtop Shell Bath Freezer is a self-contained, compact freezing unit designed to produce a coating on the inside of freeze-drying flasks. Using this method makes the freeze-drying process far more efficient by facilitating vapor flow from the sample during lyophilization.

The VirTis Benchtop Shell Bath is the perfect processing companion to your VirTis brand Benchtop Freeze Dryer. Available in two temperature models, -45°C and -70°C, the Bath is mounted in a streamlined, compact cabinet. Freeze-drying flasks are automatically rotated in a refrigerated bath containing alcohol or any other freeze resistant fluid. The stainless steel rollers rotate the freeze-drying flasks creating a thin frozen coating around the inside of the flask.

### Ordering Information

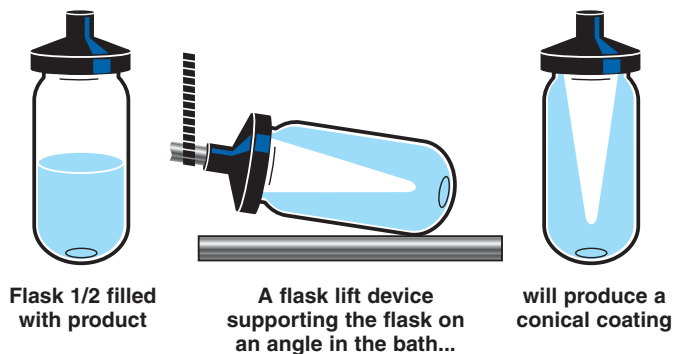
Part Number	Temperature	Electrical*
445896	-45°C	115V
445897	-45°C	208-240V
445898	-70°C	115V
445899	-70°C	208-240V

\*208-240V are 50 or 60 Hz compatible



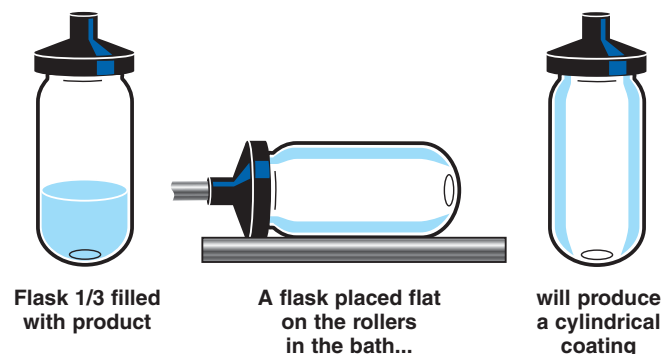
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...and Continuous Support*

# The Shell Freezing Process



## Conical Coating

Fill flasks slightly less than halfway with product. Place flasks in the alcohol bath and attach the lift device. Make sure the product level is low enough so the filter won't get wet, freeze over, and block the vapor flow. The rollers will rotate the flasks while the refrigerated bath freezes the product. This results in a thin, even, high surface area coating of frozen material on the inside of the flask. The increased product surface area permits vapor to escape quickly and easily, shortening drying time.



## Cylindrical Coating

Fill the flasks slightly less than 1/3 and place the flask on the rollers. The method results in a thin coating on the inside of the flask walls for optimum drying speed.

## Specifications

- All steel framing for vibration free operation
- Corrosion resistant stainless steel bath and rollers
- Removable motor assembly for easy cleaning
- Front panel removable drain for easy adjustment or draining of bath liquid
- Spill resistant instrument panels
- Transparent cover to minimize evaporation
- Compact/lightweight for benchtop operation

### Unit Dimensions

Width	Length	Height
12.5" / 31.9 cm	19" / 48.3 cm	21.5" / 54.6 cm

Weight: 59 lbs. (26.5 kgs)

### Shell Bath Dimensions

Width	Length	Depth
9.5" / 24.1 cm	11" / 27.9 cm	5.5" / 14 cm

Stainless steel, insulated with removable roller drive for easy cleaning.

### Shell Bath Capacity (# of flasks)

4 ea.	2 ea.	2 ea.	2 ea.	2 ea.	2 ea.
40 mL	75 mL	150 mL	300 mL	600 mL	1200 mL

### Instrumentation

The VirTis shell bath is easy to use. The controls turn on the refrigeration system and start cooling the bath. The temperature can be displayed in °C or °F. The rollers can be turned off independently from the refrigeration system. There is a countdown timer with alarms.

### Temperature and Refrigeration System

-45°C ES	Single Compressor	Single Stage
-70°C XL	Single Compressor	Auto-Cascade

All models use CFC-free refrigerant



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