



HANIL SCIENTIFIC CONCENTRATORS

For your sample concentration

hanil

Freeze Dryer and Cooling Trap

HyperCOOL™

HyperCOOL is a lab scale freeze dryer using the lyophilization phenomena. HyperCOOL is designed for safety, robustness and convenience for the successful freeze drying and cold trapping. It is suitable for drying of aqueous products, various solvents and products with a low freezing point.

HyperCOOL with stylish, modern and unique design will help you enjoy your daily laboratory work to the fullest.

Features

- Provide wide solvent coverage by dropping temperature down to -110°C
- HyperCOOL by itself, when equipped with manifolds or chambers, becomes a versatile freeze dryer
- The compatible vacuum rotary vane pump generates vacuum down inside the chamber
- Automatic De-Vac and De-Ice functions installed
- Magnet embedded front cover of the condenser for very convenient cleaning
- Extended applications for concentrating wider range or larger volume of solvents

Applications

- Pharmaceutical study and production
- Research and production of vaccine and antidote
- Drying and preservation of plants, food and etc.
- Archaeological study



Freeze Drying

The freeze drying, also known as lyophilization is dehydration technique through sublimation process, the shift from the solid directly into the gas without liquid phase. The materials must be frozen completely to remain as solid state during sublimation process. Additionally, applying vacuum enables lower the pressure below triple point, which can avoid the liquid phase. The freeze drying technique is used in various applications in food industry, pharmaceutical and biotechnology field and other industrial areas. HyperCOOL system allows complete removal of residual moisture.

Freezing Point Depression

$\Delta T = iK_f m$

ΔT = Decrease in solution freezing point
 K_f = Freezing point depression constant for the solvent
 m = Molality

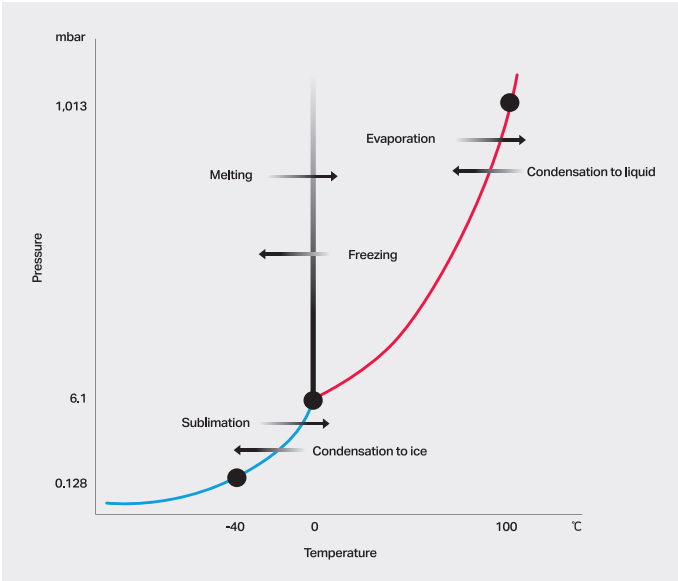


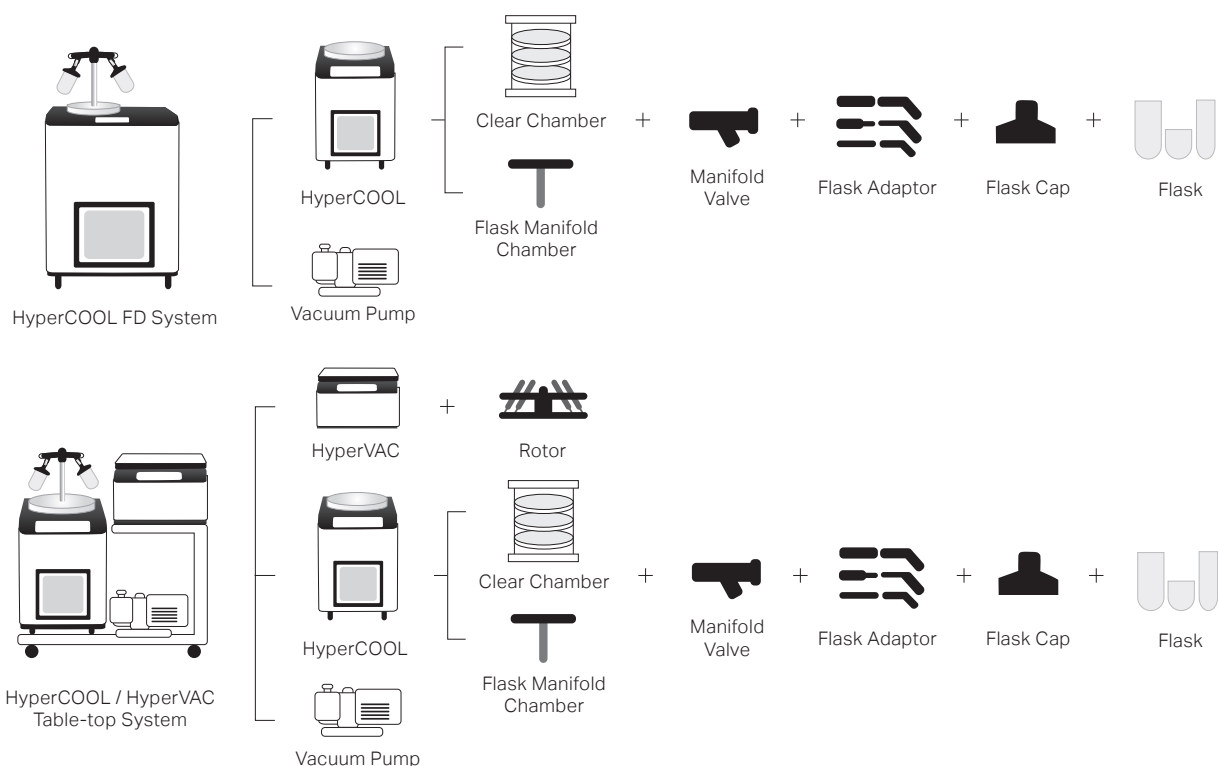
Figure 2. Typical Phase Diagram of Water

Technical Specifications

	HyperCOOL HC3055	HyperCOOL HC3110	HyperCOOL HC8080
Ultimate Chamber Temp (at RT) (°C)	-55	-110	-80
Chamber Volume (L)	4		25
Trap (Chamber) Size (Ø x L)	165 x 202		305 x 355
ICE Condensing Capacity (kg)	3		8
Digital Readout	Temperature, Time		Time, Program, Temperature, Vacuum Pressure
Function	KEYLOCK, DEFROST, VACUUM, TIME		COOLING, VACUUM
Power Requirement (Resting, VA)	642	819	1,500
Dimension (W x D x H, mm)	400 x 660 x 570		710 x 610 x 960
Weight (kg)	58	72	195
Power supply	230 V, 50 Hz (AC 220-230 V, 50/60 Hz; 110 V optional)		
Cat. No.	Hyper-HC3055	Hyper-HC3110	Hyper-HC8080



System Diagram of HyperCOOL



Cover Plates for HyperCOOL

HHC-CPP HC3055, HC3110 Trap Plate for Connection Vacuum Hose to Vacuum Concentrator	HHC-CPB HC3055, HC3110 Acrylic Base for Manifold or Chamber	HHC-CPM HC3055, HC3110 Acrylic Base for HC-MFB-8V	HHC-CPP(8) HC8080 Trap Plate for Connection Vacuum Hose to Vacuum Concentrator	HHC-CPB(8) HC8080 Acrylic Base for Manifold or Chamber	HHC-CPM(8) HC8080 Acrylic Base for HHC-MFB-8V

Manifolds for HyperCOOL

HHC-MFB-4V Incl. 4 rubber valves on a stainless steel bar, 30 cm	HHC-MFB-6V Incl. 6 rubber valves on a stainless steel bar, 30 cm	HHC-MFE-4V for extension Incl. 4 rubber valves on a stainless steel bar, 20 cm	HHC-MFE-6V for extension Incl. 6 rubber valves on a stainless steel bar, 20 cm	HHC-MFB-8V Incl. 8 rubber valves on a stainless steel bar, 30 cm

FD Glass Flasks

FD2009	Freeze Drying Glass Flask 40 mL, Ø45 mm
FD2010	Freeze Drying Glass Flask 80 mL, Ø45 mm
FD2011	Freeze Drying Glass Flask 120 mL, Ø45 mm
FD2012	Freeze Drying Glass Flask 150 mL, Ø45 mm
FD2013	Freeze Drying Glass Flask 300 mL, Ø45 mm
FD2013-1	Freeze Drying Glass Flask 300 mL, Ø70 mm
FD2014	Freeze Drying Glass Flask 600 mL, Ø70 mm
FD2015	Freeze Drying Glass Flask 900 mL, Ø70 mm
FD2016	Freeze Drying Glass Flask 1,200 mL, Ø70 mm
FD2017	Freeze Drying Glass Flask 2,000 mL, Ø70 mm

Chambers and Racks for HyperCOOL

HHC-CH30P Acrylic Chamber Trunk and Plain Top, ø30 cm, height 40 cm	HHC-CH30-4V Acrylic Chamber Trunk and Top with 4 rubber valves, ø30 cm, height 40 cm	HHC-CR25 Stainless Steel Rack with 3 sets of shelves and trays, ø25cm (Trays can be inserted up to 5)	HHC-CR-TS A Set of a Tray and a Shelf	HHC-CH30-8V Acrylic Chamber Trunk and Top with 8 Rubber Valves, ø30 cm, height 40 cm



HANIL SCIENTIFIC INC.

16 Arayukro, Gimpo 10136, Rep. of KOREA
T. +82-2-3472-0727 | F. +82-31-985-9158
sales@ihanil.com | techsupport@ihanil.com
www.ihanil.com



*Unit F8, Maynooth Business Campus,
Maynooth,
Co. Kildare,
Ireland.*

***Tel: +353 1 9602050
eMail: sales@elementec.ie***