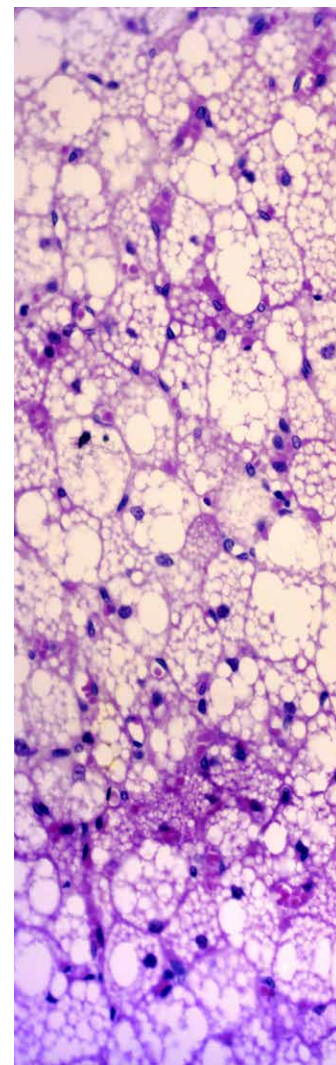


Corning® Sample Cooling and Heating Systems

A family of solutions that enables consistent, reproducible, and standardized sample handling

CORNING



Ensure temperature consistency and minimize contamination risk

It's well established that control and standardization of analytical processes is critical to successful research outcomes. However, often the pre-analytical steps are overlooked – although sample collection, handling, storing, and preparation steps are just as important to the overall success of downstream analysis. Variables like inconsistent sample temperature can result in misleading analytical results, which may slow down or ultimately jeopardize your research.

Corning's sample cooling and heating solutions enable consistent, reproducible, standardized temperature control with or without ice, electricity, or batteries. These solutions address the pitfalls of temperature regulation and reduce contamination risk, keeping your samples cool and stable while you work.

Reduce variability originating from tubes, plates, or wells placed directly into ice, dry ice, alcohol baths, water baths, and other cooling or heating temperature sources with Corning CoolRack® and Corning CoolSink® thermo-conductive modules.

The platform is flexible so you can select the right components for your application and working style. CoolRack and CoolSink modules may be placed in traditional Corning ice buckets and pans, or for an ice-free option, use with Corning CoolBox™ ice-free cooling systems. Regardless of your desired configuration, you can feel confident that you will keep your sample temperature stable and set your research up for success—right from the start.



Good –
Ice bucket with ice



Better –
Ice bucket with CoolRack



Best –
CoolBox with CoolRack



Corning® CoolRack® and Corning CoolSink® Thermo-conductive Modules

Corning CoolRack and CoolSink thermo-conductive modules reduce variability which originates from tubes or wells placed directly into ice, dry ice, alcohol baths, water baths, and other temperature sources. Place the thermo-conductive modules directly onto a temperature source between -196°C to $>100^{\circ}\text{C}$ and it will rapidly adapt to that temperature. Both CoolRack and CoolSink modules ensure $\pm 0.1^{\circ}\text{C}$ temperature uniformity across all tubes and plates when cooling, snap-freezing, heating, or thawing.

Suggested applications include: cooling reagents such as ECMs, like Corning Matrigel® matrix, restriction enzymes, dNTPs and antibodies, alcohol-free dry ice snap-freezing of tissue, virus and bacteria samples, and bench top cryogenic tube sorting in liquid nitrogen.

All thermo-conductive modules may be autoclaved, high heat sterilized, or decontaminated with bleach, alcohol, or other disinfectants or lab detergents. Certain CoolRack modules are SBS-compatible.

Increased Temperature Consistency

Non-uniform Plate Cooling with Crushed Ice

Final equilibrium well temperature for a 96-well flat bottom plate in direct contact with crushed ice. Colors represent 0.5°C temperature intervals of the corresponding plate wells from 4.5°C to 7.4°C .

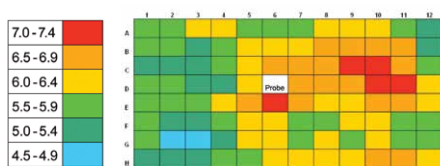


Plate directly on crushed ice, the plate does not reach 4°C in any of the wells and well-to-well temperature is uneven.

Uniform Plate Cooling with Corning CoolSink XT 96F Module

Corning CoolSink XT 96F on ice. Colors represent 0.5°C temperature intervals of the corresponding plate wells ranging from 2.5°C to 4.4°C . The white cell represents the well that was fitted with the thermocouple probe.

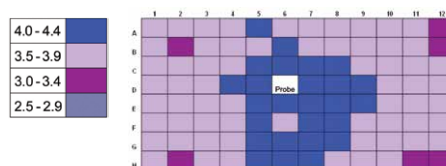


Plate placed on Corning CoolSink module and then placed on ice shows more uniform well-to-well temperature and all wells at or below 4°C . (Blue center plate wells are slightly warmer due to curvature of the underside of the plate).

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Visit corning.com/lifesciences for more information on Corning CoolRack and Corning CoolSink versatility and performance.



Corning® ThermalTray™ Thermo-conductive Platforms

Corning ThermalTray thermo-conductive platforms support Corning CoolRack® and Corning CoolSink® sample modules in liquid temperature sources such as melting ice, water baths, and liquid nitrogen. Made of the same highly conductive alloy as CoolRack and CoolSink modules, ThermalTray platforms conduct the source temperature to the CoolRack or CoolSink and, ultimately, to your samples.

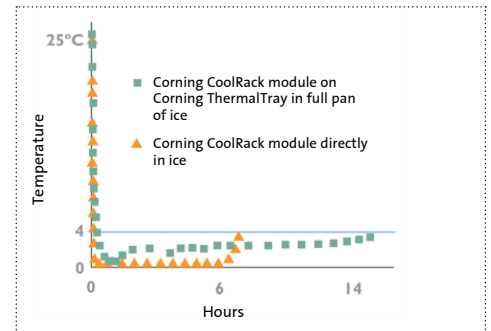
The stable, sturdy design makes them ideal for processing temperature-sensitive samples in melted ice baths or liquid nitrogen. All modules may be autoclaved, high heat sterilized, or decontaminated with bleach, alcohol, or other disinfectants or lab detergents.

Thermo-conductive Modules Versatility and Performance

On Ice



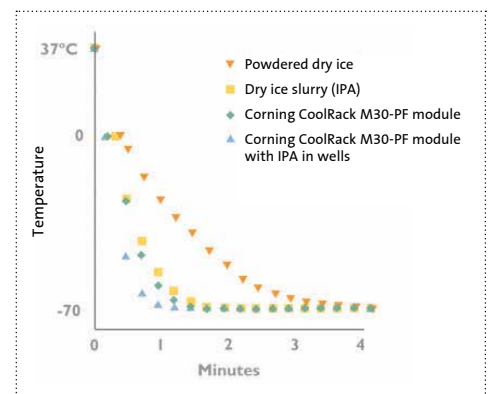
- ▶ Adapts from ambient (25°C) to <4°C in 60 to 90 seconds*
- ▶ Samples and labels stay dry, organized
- ▶ Hours of ice cooling without direct ice contact
- ▶ Reproducible method



On Dry Ice



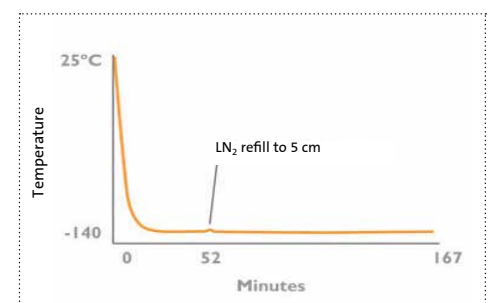
- ▶ Adapts from ambient (25°C) to -78°C in approximately 5 to 7 minutes*
- ▶ Eliminates ethanol from snap freezing
- ▶ Samples are upright and organized as they freeze
- ▶ Equal or better freezing rate as compared to direct immersion into dry ice or alcohol slurry
- ▶ Reproducible method



In Liquid Nitrogen (LN₂)



- ▶ Adapts from ambient (25°C) to approximately -150°C in approximately 12 to 14 minutes*
- ▶ Vapor barrier protects from ambient air
- ▶ Samples are upright and organized as they freeze
- ▶ No direct contact between samples and LN₂
- ▶ Reproducible method



With Heat Sources

- ▶ Use with water baths, incubators, and other heat sources to keep samples warm

*Average cooling rate from room temperature

Corning® CoolBox™ Systems

Corning CoolBox Systems are bench top cooling systems that provide sample cooling or freezing without ice, electricity, or batteries.

Versatile and accommodating to a variety of sample formats and temperatures, the CoolBox modular design enables the use of both Corning CoolRack® and Corning CoolSink® thermo-conductive sample modules to hold microcentrifuge tubes, cryogenic vials, PCR tubes, or assay plates at a stable temperature while you work.

Corning CoolBox

- ▶ Allows all-day cooling (up to 16 hours) or freezing (up to 8 hours) with one Corning XT Cooling Core
- ▶ Removes the need for trips to the ice machine; reduced risk of ice contamination
- ▶ Accommodates a wide array of sample tubes and plates
- ▶ Available in single- or double-capacity systems for a variety of applications

The internal cooling or freezing cores provide hours of 0.5°C to 4°C cooling or -20°C to 0°C sample freezing. CoolBox systems may also be used with dry ice to create a compact, portable, snap-freezing workstation for bacteria, viruses, or proteins.

Corning Cool Box is available in a variety of configurations and is compatible with all of the Corning CoolRack and Corning CoolSink thermo-conductive sample modules.



Corning XT Starter is an open-platform cooler that accommodates most Corning CoolRack and Corning CoolSink modules, making it a versatile and flexible tool for a variety of applications. The low profile and small footprint make it ideal for use in the hood. XT Starter keeps samples cold (0.5°C to 4.0°C) for up to four hours. The 1°C to 8°C temperature indicator provides visual assurance of proper temperature. XT Starter includes: one Corning XT Holder base and one Corning XT Cooling Core. To extend the cooling duration, keep an additional XT Cooling Core in the freezer and replace the Core as needed.

Corning CoolBox XT systems are ideal as a benchtop cooling workstation. This system includes a base, collar, lid, and one Corning XT Cooling Core (accommodates one tube or plate sample module) which can be used for sample cooling and accommodates one tube or plate sample module.

Corning CoolBox 2XT systems include a base, collar, lid, and two Corning XT Cooling Cores which can be used for sample cooling. When using taller tube modules in the CoolBox XT/2XT systems, order an optional Corning Extension Collar to extend the height of the system and allow the lid to close. Choose from a selection of pre-configured systems or create your own configuration.

Corning CoolBox 30 systems accommodate all 30-well Corning CoolRack tube modules. Choose from a selection of pre-configured systems or create your own configuration.



Corning® Ice Buckets and Pans

For added convenience, Corning now offers recyclable, nontoxic ethylene-vinyl acetate (EVA) containers for use with ice, dry ice, or liquid nitrogen.

These multi-purpose containers are highly insulative, stackable, unbreakable, lightweight, and leak-proof. Containers will not “sweat” or deform and have a textured finish on the bottom to prevent slipping on the benchtop. Ideal for use with ice, dry ice (-78°C), liquid nitrogen (-196°C), alcohol or saline solutions, or warm solutions up to +93°C.

Available in five sizes and seven colors.



Ordering Information

Corning CoolRack® M Microcentrifuge Tube Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|----------------------|--|--------|
| 432034 | CoolRack M6, gray | 6 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432035 | CoolRack M6, green | 6 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432036 | CoolRack M6, orange | 6 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432037 | CoolRack M15, gray | 15 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432038 | CoolRack M15, green | 15 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432039 | CoolRack M15, orange | 15 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432041 | CoolRack M30, gray | 30 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432042 | CoolRack M30, green | 30 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432043 | CoolRack M30, orange | 30 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432044 | CoolRack M90 | 90 x 1.5 or 2 mL microcentrifuge tubes | 1 |
| 432045 | CoolRack M96 ID | 96 x 1.5 or 2 mL microcentrifuge tubes with A to H and 1 to 12 row and column indexing | 1 |

Corning CoolRack M-PF Conical Tube Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|------------------------|---------------------------|--------|
| 432046 | CoolRack 500 µL M30-PF | 30 x 0.5 mL conical tubes | 1 |
| 432047 | CoolRack M15-PF | 15 x 1.5 mL conical tubes | 1 |
| 432048 | CoolRack M30-PF | 30 x 1.5 mL conical tubes | 1 |

Corning CoolRack CF Cryogenic Vial and FACS Tube Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|-------------------|---|--------|
| 432049 | CoolRack CF15 | 15 cryogenic vials or FACS tubes | 1 |
| 432050 | CoolRack XT CFT24 | 24 cryogenic vials or FACS tubes, with "gripping" wells for one-hand vial opening/closing, SBS-compatible | 1 |
| 432052 | CoolRack CFT30 | 30 cryogenic vials or FACS tubes, with "gripping" wells for one-hand vial opening/closing | 1 |
| 432051 | CoolRack CF45 | 45 cryogenic vials or FACS tubes | 1 |

Corning® CoolRack® PCR Microplate, Strip Tubes, or Tube Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|--------------------|---|--------|
| 432053 | CoolRack XT PCR96 | 96-well PCR microplate, PCR 12-strip tubes or microcentrifuge tubes, SBS-compatible | 1 |
| 432055 | CoolRack XT PCR384 | 384-well PCR microplate, SBS-compatible | 1 |
| 432054 | CoolRack XT M-PCR | 12 x 1.5 or 2 mL microcentrifuge tubes or PCR 6-strip tubes, SBS-compatible | 1 |

Corning CoolRack 96 Storage Tube Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|----------------------|-------------------------------|--------|
| 432056 | CoolRack 96 x 0.5 mL | 96 x 0.5 mL 2D bar code tubes | 1 |
| 432057 | CoolRack 96 x 1 mL | 96 x 1.4 mL 2D bar code tubes | 1 |

Corning CoolRack SV Sample Vial Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|---------------|-------------------------|--------|
| 432058 | CoolRack SV2 | 12 x 5 mL sample vials | 1 |
| 432059 | CoolRack SV10 | 12 x 10 mL sample vials | 1 |

Corning CoolRack Tall Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|--------------------|--|--------|
| 432060 | CoolRack XT 5 mL | 12 x 5 mL centrifuge tubes, SBS-compatible | 1 |
| 432061 | CoolRack 15 mL | 9 x 15 mL centrifuge tube | 1 |
| 432062 | CoolRack 50 mL | 4 x 50 mL centrifuge tube | 1 |
| 432063 | CoolRack 250 mL PF | One 250 mL centrifuge tube | 1 |
| 432064 | CoolRack 250 mL | One 250 mL Easy Grip storage bottle | 1 |
| 432040 | CoolRack XT M24 | 24 x 1.5 or 2 mL microcentrifuge tubes, SBS-compatible | 1 |
| 432068 | CoolRack L | 12 x 15 mL centrifuge tubes, light weight insulated module | 1 |

Corning CoolRack V Blood Collection Tube Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|---------------|---|--------|
| 432065 | CoolRack VS13 | Nine 13 x 75 mm blood tubes | 1 |
| 432067 | CoolRack V13 | Nine 13 x 100 mm blood tubes or 5 mL cryogenic vials | 1 |
| 432066 | CoolRack V16 | Nine 16 x 100 mm blood tubes | 1 |
| 432069 | CoolRack LV | 12 x 13 mm or 16 mm diameter tubes, light weight insulated module, thermo-conductive base and insulative exterior | 1 |

Corning CoolRack and CoolSink® Plate and Reservoir Modules

| Cat. No. | Description | Capacity | Qty/Cs |
|----------|----------------|---|--------|
| 432139 | CoolRack LX50 | One Axygen® 50 mL disposable reagent reservoir (RES-V-50, RES-V-50-S, or RES-V-50-SI) | 1 |
| 432070 | CoolSink XT96F | One 6-, 12-, 24-, 48-, 96-, or 384-well flat bottom plate, SBS-compatible | 1 |
| 432071 | CoolSink XT96U | One 96-well U-bottom microplate, SBS compatible | 1 |
| 432072 | CoolSink LX55 | One 55 mL reagent reservoir | 1 |

Corning ThermalTray™ Thermo-conductive Platforms

| Cat. No. | Description | For Use With | Qty/Cs |
|----------|------------------------------------|---------------------------------|--------|
| 432073 | ThermalTray SLP, slim, low profile | 9L ice pan with liquid nitrogen | 1 |
| 432074 | ThermalTray LP, low profile | 9L ice pan with crushed ice | 1 |
| 432075 | ThermalTray HP, high-profile | Water bath | 1 |

Corning XT Starter Ice-free Coolers

| Cat. No. | Description | Contains | Qty/Cs |
|----------|---------------------------------|-------------------------------|--------|
| 432014 | XT Starter, complete, purple | XT Holder and XT Cooling Core | 1 |
| 432015 | XT Starter, holder only, purple | XT Starter Holder only | 1 |

Corning CoolBox™ XT Modules

| Cat. No. | Description | Contains | Qty/Cs |
|----------|---------------------|------------------------------|--------|
| 432021 | CoolBox XT, purple | Holder and one Cooling Core | 1 |
| 432022 | CoolBox XT, green | Holder and one Cooling Core | 1 |
| 432023 | CoolBox XT, orange | Holder and one Cooling Core | 1 |
| 432024 | CoolBox XT, pink | Holder and one Cooling Core | 1 |
| 432025 | CoolBox 2XT, purple | Holder and two Cooling Cores | 1 |
| 432026 | CoolBox 2XT, green | Holder and two Cooling Cores | 1 |
| 432027 | CoolBox 2XT, orange | Holder and two Cooling Cores | 1 |
| 432028 | CoolBox 2XT, pink | Holder and two Cooling Cores | 1 |

Ordering Information (continued)

Corning® CoolBox™ Accessories

| Cat No. | Description | Qty/Cs |
|---------|--|--------|
| 432081 | XT Cooling Core | 1 |
| 432082 | XT Freezing Core | 1 |
| 432083 | Extension collar for CoolBox XT, purple | 1 |
| 432084 | Extension collar for CoolBox XT, green | 1 |
| 432085 | Extension collar for CoolBox XT, orange | 1 |
| 432086 | Extension collar for CoolBox XT, pink | 1 |
| 432087 | Extension collar for CoolBox 2XT, purple | 1 |
| 432088 | Extension collar for CoolBox 2XT, green | 1 |
| 432089 | Extension collar for CoolBox 2XT, orange | 1 |
| 432090 | Extension collar for CoolBox 2XT, pink | 1 |
| 432091 | CoolRack Temperature Strip, 1°C to 8°C | 3 |
| 432092 | CoolRack Elastic Sleeves | 4 |

Corning Ice Buckets, Round, with Lid

| Cat No. | Description | Qty/Cs |
|---------|------------------------------------|--------|
| 432122 | Ice bucket, round 4L, green | 1 |
| 432123 | Ice bucket, round 4L, blue | 1 |
| 432124 | Ice bucket, round 4L, red | 1 |
| 432125 | Ice bucket, round 4L, orange | 1 |
| 432126 | Ice bucket, round 4L, lime green | 1 |
| 432127 | Ice bucket, round 4L, pink | 1 |
| 432128 | Ice bucket, round 4L, purple | 1 |
| 432129 | Ice bucket, round 2.5L, blue | 1 |
| 432130 | Ice bucket, round 2.5L, green | 1 |
| 432131 | Ice bucket, round 2.5L, red | 1 |
| 432132 | Ice bucket, round 2.5L, orange | 1 |
| 432133 | Ice bucket, round 2.5L, lime green | 1 |
| 432134 | Ice bucket, round 2.5L, pink | 1 |
| 432135 | Ice bucket, round 2.5L, purple | 1 |

Corning Ice Pans, Rectangular

| Cat No. | Description | Qty/Cs |
|---------|---------------------------------------|--------|
| 432093 | Ice pan, maxi 9L, green | 1 |
| 432094 | Ice pan, maxi 9L, blue | 1 |
| 432095 | Ice pan, maxi 9L, red | 1 |
| 432096 | Ice pan, maxi 9L, orange | 1 |
| 432097 | Ice pan, maxi 9L, lime green | 1 |
| 432098 | Ice pan, maxi 9L, pink | 1 |
| 432099 | Ice pan, maxi 9L, purple | 1 |
| 432100 | Ice pan with lid, maxi 9L, blue | 1 |
| 432101 | Ice pan with lid, maxi 9L, lime green | 1 |
| 432102 | Ice pan with lid, maxi 9L, purple | 1 |
| 432103 | Ice pan, midi 4L, green | 1 |
| 432104 | Ice pan, midi 4L, blue | 1 |
| 432105 | Ice pan, midi 4L, red | 1 |
| 432106 | Ice pan, midi 4L, orange | 1 |
| 432107 | Ice pan, midi 4L, lime green | 1 |
| 432108 | Ice pan, midi 4L, pink | 1 |
| 432109 | Ice pan, midi 4L, purple | 1 |
| 432110 | Ice pan with lid, midi 4L, blue | 1 |
| 432111 | Ice pan with lid, midi 4L, orange | 1 |
| 432112 | Ice pan with lid, midi 4L, lime green | 1 |
| 432113 | Ice pan with lid, midi 4L, pink | 1 |
| 432114 | Ice pan with lid, midi 4L, purple | 1 |
| 432115 | Ice pan, mini, 1L, green | 1 |
| 432116 | Ice pan, mini, 1L, blue | 1 |
| 432117 | Ice pan, mini, 1L, red | 1 |
| 432118 | Ice pan, mini, 1L, orange | 1 |
| 432119 | Ice pan, mini, 1L, lime green | 1 |
| 432120 | Ice pan, mini, 1L, pink | 1 |
| 432121 | Ice pan, mini, 1L, purple | 1 |

For more specific information on claims, visit the Certificates page at www.corning.com/lifesciences.

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