

# VACPACK™

INNOVATIVE FOOD PACKAGING

## Cook Chill System

### Easy as 1-2-3



+64 9 443 6301

[info@vacpack.co.nz](mailto:info@vacpack.co.nz)

[www.vacpack.co.nz](http://www.vacpack.co.nz)

## Cook Chill Information booklet

- The purpose of this booklet is to provide information on the Cook Chill process, from Cook, Fill to Chill. Information contained within has been derived from the Food Standards Australia New Zealand and MPI providing a science-based reference pertaining to the prevention of food-borne illness.
- VacPack recommends that a certified food technician be consulted on technical issues and that a documented HACCP procedure be created for the operators using Cook Chill.

## What is Cook Chill?

- Preparing food in bulk quantities to maintain freshness under refrigeration.
- Packing food into a specialised barrier bag at or above 74°C (pasteurization) sealing it and crash chilling to below 4 degrees within 4 hours.
- Storing at a temperature between -20°C and 2°C to achieve extended shelf life.
- Food packaged in properly chilled bags will have shelf life of minimum 28 days.



## Advantages of Cook Chill

- Food on demand vs. cook and serve
- Preserve nutrient integrity and flavour
- Consistent taste and quality
- Labour savings: Reduce operating costs by 35% or more
- Levels for every production from small entry to mass production kitchens

## Menu Items for Cook Chill

- Soups/Chowders



- Sauces/Gravy/Jus



- Chilli/Stews/Curry's/Pie Fillings



- Mashed/Pureed Vegetables



## Step One: Food Preparation/Cooking

- Liquid or semi-viscous menu items (i.e. soups, sauces, stews, etc) cooked to or past a pasteurization temperature of 74°C.
- At this point, bacteria are eliminated in the food.
- It is recommended that food can be cooked to at least 82°C which allows an additional buffer during the filling and sealing of the bags.
- Vacpack supply 40 - 470L top of the line Dieta Kettles that attach directly to our filling stations



## Step Two: Packaging/Filling

- We have Cook Chill bags which can be filled up to 8 litres
- Packing more than 8 litres will slow cooling time and may compromise the desired shelf life.
- Remove food from heat directly into bags. Product remains pasteurized until 74°C, the bag should be sealed at this temperature and any air in the bag is pasteurised.



## Manual Filling

- A pedestal holds the bag open during filling
- A calibrated pitcher or vessel portions of the desired amount of food into each bag.



## Sealing

- Prior to sealing, evacuate as much air as possible from the bag then seal near the top of the open end.
- When the temperature of the food reaches the point of pasteurization (74°C), any air remaining inside the bag is also pasteurized.
- Allow at least 10cms between the top of the food and where the bag is sealed. The bag should not be packed firmly like a cookie dough package.
- Food should move freely inside the bag.  
This movement accelerates cooling of the food.



## Semi-Automatic Filling

- Pump fill stations do all the measuring digitally with a built in sealing bar to fill and seal in one



## Full Automatic Filling

- Vertical form fill and seal machine to pump hot liquid into barrier bags



For videos please visit [www.vacpack.co.nz](http://www.vacpack.co.nz)

## Validate Bag Fill Level

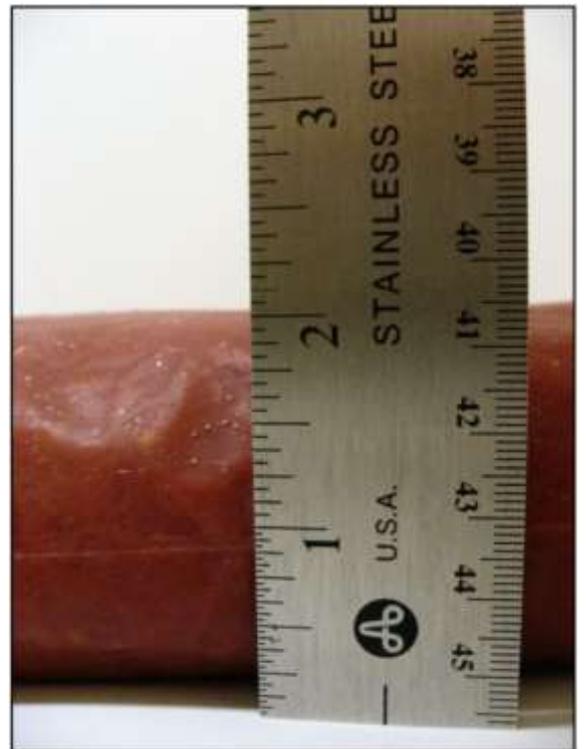
- Critical to proper cooling is the Bag Fill Level
- There are 2 methods by which the Bag Fill Level can be validated.

- Saddle Validation is conducted by laying the filled bag over extended fingers. The bag should be evenly distributed like a “saddle-bag”.



- Fingers should be partially visible through the centre of the bag. If fingers are not visible, then the bag has been overfilled and will not cool properly.

- The second method is referred to as the Table Test. This is performed by laying the bag flat on the table and taking a measurement of the height from the table surface to the top of the bag. The height should measure no more than 5.0 – 6.5 cms. If the measurement exceeds 6.5cms, then the bag is overfilled and will not cool properly.



## Checking Bag Temperature

Since the bag cannot be punctured to obtain a true internal temperature, two methods have been developed to validate the internal temperature of a packed bag. Both methods require the development of a HACCP protocol for calculating internal temperature for the specific food products being packed.

1. Shake the bag vigorously to assure a consistent internal temperature. Place a Bimetallic Stemmed Thermometer in the centre of a bag and then fold one side over the other pinching the stem of the thermometer to obtain a reading. Consult the HACCP protocol for the correlating targeted temperature.

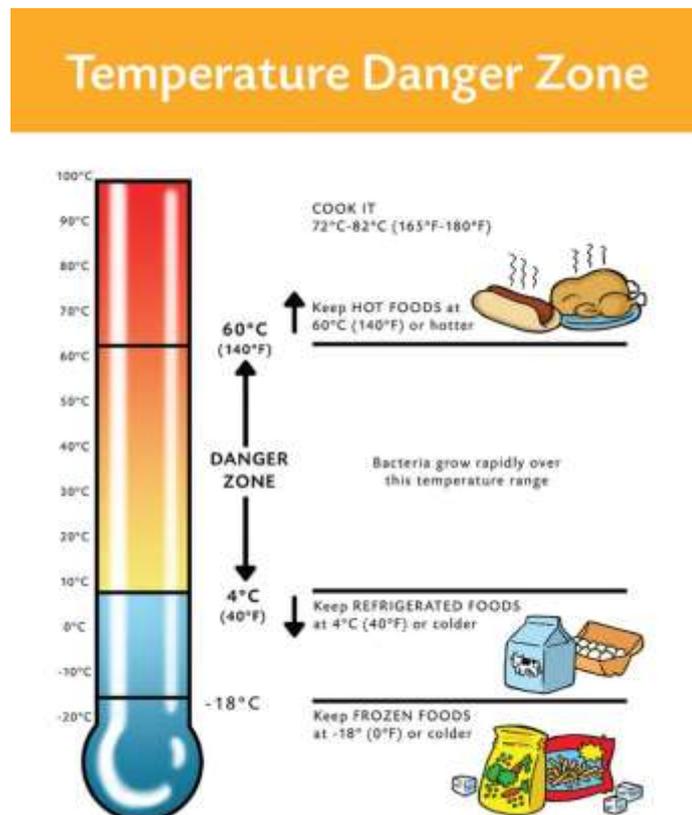


2. Shake the bag vigorously to assure a consistent internal temperature. Using an Infrared (Laser) Thermometer, take the reading of the surface of the bag. Consult the HACCP protocol for the correlating targeted temperature.



## Step 3: Chilling / Cool Down Process

- Bacteria grow rapidly when food is in “The Danger Zone” 60°C to 5°C
- Chilling the food through “The Danger Zone” is the most important aspect of the cook chill process.
- Do not prepare more food than can be packed before the temperature falls below 60°C. If the temperature does fall below 60°C, food must be reheated to a minimum of 74°C for 15 seconds before filling may resume.



## Food Standards Australia & New Zealand

### Stage 1:

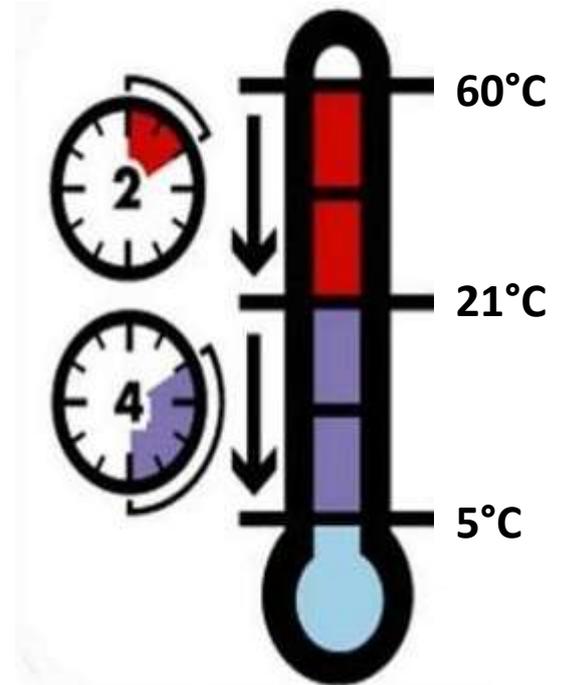
Cool foods to below 21°C within two hours.

### Stage 2:

Cool foods from 21°C to 5°C or lower within the next four hours.

*If food is not cooled to 21°C within two hours, it must be reheated to 74°C for 15 seconds before packing resumes.*

*Check local requirements for reheating protocol.*



*Food must be cooled from 60°C to 21°C within two hours and from 21°C to 5°C or lower in the next four hours.*

## Cooling Method: Blast Chiller

A blast chiller employs a forced air system in a cabinet type freezer. Utilizing wheel in carts, food in steam table pans or packed in bags loaded onto the shelves of the cart. The cart is wheeled into the cabinet. Hot foods are then rapidly brought through the Danger Zone (from above 60°C to below 5°C).



## Tumble Chiller



The filled bags are loaded directly into the product chiller, where they gently tumble in circulating cold water. The tumbling action quickly removes heat from the bags, dropping the product temperature from 82°C to 5°C in 60 minutes or less.

## Ice Water Bath

Most commonly used with the Manual System. Generally, a three-bay sink, large tub or Portable Circulating Chiller is filled with ice & water. Packed bags are placed into the ice water bath and need to be occasionally agitated by hand (if not using PCC).



## Storage – Shelf Life

- Cook Chill is defined as keeping chilled bags in refrigeration storage at temperatures ranging from 2°C - 0°C.
- Shelf life may be extended to 28 days (minimum) depending upon menu item and how quickly chilling occurs.



## Double bottom sealed bags

- Double bottom sealed bags for extra strength and safety.
- We dry blow bags in production for easy opening.
- Temperature variance is from -18°C to 100°C.



## Systems for Small – Large Production

For small to medium sized food service operators wanting to gain the benefits of cook chill, the Vacpack Manual Cook Chill System has an approximate entry start-up cost of approx. \$1,500 + Gst.

This is less than 7% when compared to the cost of an Automated Cook Chill System.

- Entry start up cost entails: Foot Sealer, Single Pedestal, Cook Chill Bags, Ice Water Bath

## Operator Benefits Food Quality

- Cook Chill prepared foods have the taste, texture, colour, and aromas of freshly prepared menu items.
- Centralized purchasing, ingredients preparation and production ensures consistent food quality.
- Refrigerated – NOT FROZEN – storage maintains cellular structure therefore the texture and consistency of food stays to the highest quality.



## Operator Benefits Sanitation / Food Safety

- Cook Chill Bags are ideally suited for implementation of HACCP (Hazard Analysis and Critical Control Point) food safety programme.
- Products are packed hot at pasteurized temperatures into clean bags. Any Auditor will be highly impressed with the food safety programme.
- Cook Chill bags are durable. Once closed and chilled, the product can then be reheated either in or out of the bag according to the recipe.



## Operator Benefits Cost Savings

- Primary food production hours are decreased. This saves money.
- Fewer highly trained employees are needed. This saves money.
- A “finished” inventory of 4-7 litre bags can reduce waste from preparing too much food for daily needs and reduce loss from theft. This saves money.



## Operator Benefits

### Planning / Control / Other

- Cook Chill operation allows more advanced scheduling of production, labour, and raw materials purchase.
- Production employees can be scheduled on an 8-hour, five-day work schedule. This can improve employee morale, employee retention and help recruitment.
- A refrigerated “food bank” provides emergency back up in case of natural disasters, staffing issues and during work stoppages.
- A Cook Chill operation can allow operators to solicit outside food production contracts, expanding profit centre capabilities.

## Calculate Your Yearly Savings

Calculate Your Yearly Savings

Use the Following Chart to Estimate How Much You Can Save

Multiply your expenses by a savings factor listed below:	Example			
A) Yearly hot food production labor cost (30-50% savings)*	\$	x .50	\$	(\$500,000 x .50) \$250,000
B) Yearly raw prepared food cost (10% savings)**	\$	x .10	\$	(\$500,000 x .10) \$50,000
C) Yearly labor savings for cleaning pots & pans (8% savings)*	\$	x .08	\$	(\$500,000 x .08) \$25,000
D) Yearly energy cost KW/H (2% savings)*	\$	x .02	\$	(\$500,000 x .02) \$10,000
* Depends upon specific customer application.	Grand Total (add lines A-D)		\$	(Total Savings) \$350,000

# Contact Information

## Vacpack

(A division of D&L Packaging)

### Cook Chill Suppliers

Ph: 09 443 6301

Email: [info@vacpack.co.nz](mailto:info@vacpack.co.nz)

Website: [www.vacpack.co.nz](http://www.vacpack.co.nz)