Basic guide to cooking with liquid nitrogen

INTRODUCTION:

Liquid nitrogen is found at a very low temperature (-196 ºC) and, at the same time, its vapor pressure is very high. Therefore, on immediate contact with food and due to the sudden change in temperature, it rapidly evaporates and sends up plumes of bubbles, forming crystals that mix with the gas bubbles themselves. As a result, a kind of aerosol of nitrogen bubbles and dissolution micro-crystals is created, that is to say, instantaneous ice cream with an incredibly smooth texture.

Its applications can be really versatile and it will be up to the chef, pastry chef or bartender to choose what it is to be in each case of its final application.

Submerge foods in order to freeze them and then effortlessly break them into pieces without losing a drop of their juice, color or flavor, frozen foams, oils and high-fat sauces trickled in the nitrogen to obtain fun finishes, submerge foods and obtain vast temperature contrasts between the interior and exterior (-70 ºC to 20 ºC), achieve incredible finishes and fillings using the chilled sauce-covering garnish technique, submerge spurts of liquid to make brittle spaghetti, pulverize liquids with the help of aerosols, use molds to create shapes or containers, as an instantaneous refrigerant to chill a metallic grill (Teppan Nitro) to -60 ºC and cook thin layers of fruit with below-zero temperatures, chocolate creations and, needless to say, inconceivable ice creams in seconds with a really smooth consistency.

The cocktail world can also afford one or two impressive techniques, as liquid nitrogen allows all kinds of alcohol to be frozen. This paves the way for new possibilities that were unthinkable until now, such as serving alcoholic drinks with different textures, etc.

It is chefs such as Heston Blumenthal, Ferran and Albert Adrià, Dani García and Kristof Coppens, to name but a few, who have openly developed a specific cooking technique and have made a triumphant entrance into the world of modern cuisine in just a few years.

Further on, we will expand upon each of these techniques one by one. However, before we continue, let’s get acquainted with everything related to handling liquid nitrogen, such as the different types of containers, its main requirements for use, safety, work equipment and accessories as well as familiarize ourselves thoroughly with its characteristics.

Type and size of N2 storage containers

For these impressive preparations, a special container with the sufficient amount of liquid nitrogen is necessary at the establishment itself. These special storage containers (Dewar) are essential both for its transport and its maintenance, given that nitrogen must be stored at a very low temperature to prevent evaporation. These containers cannot be airtight; they need a relief valve to turn into gas again and thereby prevent the vessels from exploding. Remember that liquid nitrogen can increase its volume almost 700 times.

There are several types of storage containers, those with a tap or those with a pressure regulator. The latter are generally used to store a large amount of liquid inside at a higher pressure. This pressure is also necessary later on to decant the nitrogen into smaller containers.

If you occasionally wish to carry out some kind of preparation, we recommend that you at least have a 15- to 30-liter capacity container for refilling and immediate consumption. Generally speaking, they are containers with a narrow tap, greater in height than width.

On the other hand, if you are going to undertake preparations on a daily basis, we recommend you have a larger pressurized container to hold a large amount and refill smaller containers, so that you can made use of them at each service or work station with great ease. Thereby you can avail of liquid nitrogen at all times and foresee and schedule refills more conveniently. The size of your main container should be proportional to your daily consumption and the service rotation of the supplier in your area. To decant the liquid nitrogen with the utmost safety, we recommend you use the gloves your supplier will provide together with the purchase or rental of the cylinders.

A closed container should be stored in the coolest possible place with good ventilation, far from a source of heat, without moving or shaking it. You should avoid opening and closing the tap unnecessarily. Following these instructions will ensure the nitrogen is conserved from its refill until its use with the minimum loss.

As a matter of fact, Dewar vessels or containers are two vessels manufactured in aluminum, one inside the other. Between the two is a layer of insulating fiber and a vacuum seal to prevent condensation, thermal shock or the transmission or exchange of temperature. If we detect that loss through evaporation is higher than the usual or stipulated loss by the manufacturer, the container may have lost its vacuum tightness.

Consumption ratio

Its consumption and performance will largely depend on a wide range of factors: frequency of use, the various temperature and moisture differences in the preparation context, the technique employed, the containers or the large diversity of utensils used. Other factors are related to the logistics themselves such as where the refill is located, etc. The wide range of determining factors that are difficult to measure can make it virtually impossible to ascertain the exact consumption for each preparation; even with a great deal of experience, it is difficult to calculate. Perhaps liquid nitrogen should be considered as a consumable energy product such as electricity or water rather than as an ingredient.

The following table can give you an idea of its approximate conservation time when kept in the optimal conditions and without opening or closing the container.

Container size	**Static time**
5 liters	**4-5 weeks**
10 liters	**6-8 weeks**
20 liters	**8-12 weeks**

Nitrogen refill

There are different companies that take care of nitrogen production and distribution. Remember that liquid nitrogen is used for a great deal of applications including industrial, medical, cleaning, air-conditioning, veterinary, food conservation, etc., so there is an extensive network of distribution and storage facilities.

To find out which distributor can supply this service and which type of service is available, we recommend getting in contact with us via our website or contact email, giving us your contact details, location and refill preferences. We will put you in contact with the supplier in your area right away.

The refill can generally be carried out at your restaurant establishment. In other cases, the cylinder is collected, refilled and subsequently delivered. Alternatively, you can go in person to get the refill by transporting the cylinder in your vehicle, although this is ill-advised. If it is necessary, ensure that the vehicle is well ventilated and the cylinder is well secured.

Basic safety precautions and rules

Working with nitrogen calls for certain precautions and rules to which we must adhere at all times as if they were the Ten Commandments. Nitrogen does not always behave in the same manner; therefore, we should afford it the utmost respect and anticipate any given movement, behaving confidently in the event of any error when handling it. At any rate, we should know how to act and be familiar with the worst consequences.

To begin with, the use of cryogenic gloves and a protective face shield is a good safety precaution when transferring nitrogen from one container into another, given that splashing or spillages may occur when the nitrogen itself boils or in the event of an accident.

Remember that the extreme temperature of this element can cause very high-degree burns.

Another point of note is that the gloves are to avoid possible splashes and not to submerge your hands in the nitrogen. Safety comes first, so when handling liquid nitrogen we should bear in mind that the eyes are extremely sensitive and must be protected with a mask or special goggles because even a small splash could cause irreparable damage. In addition, exposure to the vapor given off by this element is not at all advisable. We believe the best protection is a face shield because that way the entire face is covered. In the event of a splash to the eyes, rinse with water at room temperature for fifteen minutes and seek medical assistance.

Prolonged contact with liquids, vapors or gases at very low temperatures can cause small and sometimes indiscernible skin lesions, which are similar to heat burns whose depth will depend on the temperature of the substance and length of time the substance is in contact with the skin.

The worst burn involves adherence when the handler has moist hands or skin. Therefore, working with wet garments is to be avoided. One first aid measure would be to submerge the burned part of the body in a water bath at 40 ºC, but not more than 42 ºC.

A vessel or container should never be sealed airtight because the enormous pressure it could reach might cause the container to explode or cause serious harm to people in the surrounding area.

Work should be carried out in well-ventilated areas because the continuous evaporation of the nitrogen can displace part of the oxygen in the air we breathe. Should this lack of oxygen be repeated or prolonged we could suffer from dizzy spells or fainting. High concentrations of nitrogen can even cause asphyxiation. To prevent any of the above effects, we recommend handling containers in cool well-ventilated rooms. In the event of a major spill, we should avoid breathing to prevent possible intoxication, ensure adequate ventilation, try to block or halt the leak and ventilate the area until the gas has fully disappeared.

You can request additional safety information from your liquid nitrogen supplier or regular supplier. Every supplier generally has specifically published manuals that address handling and safety.

Though we wish to point out that lack of experience can make us more cautious and heedful of possible accidents, we repeatedly advise you never to let your guard down even with the most routine jobs or because of your long-standing experience. It is when you start to perceive everything as safe and nothing happens when an error can occur and cause an accident. So be careful!

Transferring from storage vessel to work container

When we transfer the substance we should do so with the utmost caution. Given that it is one of the incidences when more accidents can occur, you have to be well-protected with the appropriate clothing, gloves, face shield and footwear covering the whole of the foot.

It will largely depend on the type of container you have: if it is a large drum you can always tip it with some assistance, given that it is difficult to effectively control spills due to its volume. Again, remember that it is necessary to transfer the substance in well-ventilated areas because it is during this operation that the largest spillages usually occur. Appropriate clothing, gloves, face shield and covered footwear are required in this case also.

If it involves transferring the substance from a large drum with a pressure valve, you should just open the valve slowly once its end is well secured into the recipient container. This is the most convenient, safest and most crucial procedure when working with large-capacity drums.

Nitrogen stabilizer

Liquid nitrogen sends out plumes of large white clouds as it expands, which bubbles and hisses as if we were boiling water on a hot stove. This hissing and constant puffing subsides as the container creates a thermal effect and the temperature contrast between the materials and the nitrogen grows narrower. The better the container's thermal properties, the sooner the nitrogen will stabilize and the less will be consumed. You will see that the cloud is increasingly thinner and generally remains above the vessel or container and that its hissing is very mild. This is the best time to begin submersion or pulverization work. Generally speaking, when the container is first filled, the initial evaporation will cause greater consumption. We advise you refill a second time once it has stabilized.

Work receptacles and the most suitable materials

Once the nitrogen is inside the receptacle or thermos flask we should move to the work station, trying to do so with the usual precautions or as if we were carrying a container of boiling oil. The receptacle should have good stability and not be likely to tip over as well as the best thermal insulation possible, thus the nitrogen will stabilize much sooner and its consumption will be much lower. Therefore, the bubbling will come to an end much sooner, allowing the most delicate tasks to be completed with greater precision.

Many chefs use stainless saucepans, trays, bowls and pots as containers, which can considerably increase consumption through evaporation. We recommend the use of thermal containers made with insulating materials or double-chambered receptacles.

There are various suitable receptacles for containing and working with liquid nitrogen or CO2 on the market. Dewar vessels, made of double-walled borosilicate glass type 3.3, commonly known as Pyrex®, are characterized by the fact that between their double-walled glass is a sealed vacuum chamber allowing for greater stability and loss of coldness. The delicate vessel is placed on top of a stainless ring, making it ideal for working on in front of customers. Attention should be given to its handling and its cost makes it a little exclusive. This laboratory vessel has one major drawback: its high price. This limits the number of vessels you can have when working.

To replace the Dewar laboratory vessel, our brand has created a new very similar vessel with much more applications, the Nitro Bowl. A round Pyrex® double-walled glass bowl with handle to facilitate its transportation and grip when working. It costs six times less and it allows you to have several bowls for use in the dining room. Resistant and fully transparent, they allow the customer to see the reaction occurring inside the bowl at all times, which makes its quite an attractive and spectacular sight to behold at the tableside.

A third option is a semi-rigid insulating polyurethane container. Highly resistant to +/- 200 ºC temperatures, this material is ideal for tasks in the kitchen because it is almost unbreakable and the construction material achieves stabilization of the nitrogen almost instantaneously. It comes with a lid.

100%Chef markets a double vessel with lid as well as an accessory for work on the griddle. This vessel can be used as a fryer or for submerging foods and achieving immediate freezing as well as pulverizing tasks, ice-cube making, etc.

But probably one of the most impressive tasks that can be performed in front of the customer are those allowed by the new **Salva-G Radiating Griddle**, a hotplate and radiator combined. This radiator fits perfectly inside one of the tubs of the polyurethane container and allows the surface to be cooled although the nitrogen level in its tank is low. Tasks on the hotplate can be carried out for two hours without interruption with a refill of only four liters. This Teppan Nitro is one of the most versatile appliances for nitrogen cooking.

Its aluminum surface falls to -80 ºC in barely five minutes. A good word of advice for reaching the lowest temperature possible while keeping nitrogen consumption to a minimum is to place the griddle in the freezer until use. Therefore, the temperature contrast will be much lower and will reduce nitrogen consumption through evaporation by less than half. What's more, the formation of frost on the surface will be much lower.

Its second free container can be used as a reserve tank, fryer or receptacle to store frozen items for *mise en place*. A second griddle can also be purchased to double the work surface.

Some simpler tasks can be carried out on expanded polyethylene or compressed cork plates or trays, although this is not generally recommended given their thermal

properties and especially their porosity. If this material were chosen, a fairly thick material with medium compression should be selected.

Remember that the level of hygiene of the receptacles and accessories used should be equally as strict and rigorous as any task carried out on uncooked food because the cold will not kill the bacteria but rather will dull its latent and reproductive state.

The tools or accessories to achieve different techniques should also be chosen and have certain resistance to extreme freezing temperatures. Borosilicate test tubes are essential for submerging in the liquid nitrogen without breaking. Ice buckets or silicon molds can have a lasting result but time and successive expansion can eventually burn these materials.

Stainless steel and metals appropriate for cooking are also suitable for submerging in the nitrogen, although sometimes the food sticks together because a sufficient temperature has not been reached. The use of non-stick paper can prevent the product from sticking to the metal plate. Mixers, fine-meshed stainless steel colanders, tongs and plastic molds in different shapes can afford us many ideas, etc. Popsicle sticks or wooden skewers and balloons will open up a world of possibilities.

It should be borne in mind that not all materials are suitable for submerging in nitrogen, if plastic is submerged for a long time, it will end up burning and splitting. Silicone should also be of high quality to withstand harsh temperature shocks.

There are other tools or accessories that should not be submerged and could be made of any material: pulverizers, Pasteur pipettes, syringes, squeeze bottles, caviar boxes such as Caviar-Box®, tubes and hoses, etc.

They should be clean and also comply with all the regulations regarding construction materials and food use. Equipment and accessories such as Thermomix, electric mixers, precision scales, siphon bottles, spatulas, rolling pins, etc. Expanded polyethylene containers could be useful for storing the preparations while we finish the dish.

A trick for reducing LN2 consumption when working is to keep the tools in the freezer whenever possible. Therefore, when you submerge the tools, the temperature contrast does not differ greatly and does not make so much nitrogen evaporate and bubble.

Though it would be nice to say that no possibility should be ruled out, it should be understood that it is still largely unexplored territory and, without a doubt, exploring it for yourself and unraveling new forms or techniques that afford certain culinary interest can be very rewarding.

First undertakings

Ice creams and sorbets

Photo sequence: gazpacho ice cream

One of the things we recommend making to start out is instant ice cream or sorbet, as it helps us to understand how nitrogen works and, most of all, it allows us to demonstrate its vast possibilities.

A well-structured ice cream generally consists of the main flavoring and an aqueous element, salt or sugar and a certain amount of anti-freeze (fat, alcohol) so that it does not crystallize too much and it is not too compact. What's more, having been whipped, it might be a little more aerated.

This practice or way of making ice cream allows us to obtain a deliciously creamy consistency. Its smoothness is afforded by the fat, or in the case of sorbets, surprisingly small and smooth crystals can be attained with the help of alcohol.

Natural ice creams or sorbets made with nitrogen are not characterized by their stability and we recommend making them at the time of eating if possible. We can also prepare a certain amount and set it aside in a conventional freezer during service, though it will not have the same texture.

The use of some customary additives employed in professional ice cream making such as glycerin, anti-freeze, emulsifiers, stabilizers, etc., can also help. They will give rise to better structure and shelf-life, but what is generally surprising about the liquid nitrogen ice cream technique is the ability to make ice creams that would be virtually impossible any other way, thereby broadening our repertoire and affording interest to this technique.

For this type of preparation, the only precaution to be taken is that the liquid nitrogen is handled correctly in its container. Therefore, taking the essential precautions, it can even be made in front of the customer to show them just how spectacular this technique is.

Gazpacho ice cream

ingredients: 0.5 l gazpacho, 25 g glycerin, 0.5 l LN2

Prepare a creamy and well-seasoned gazpacho, add some glycerin to give some creaminess to the ice cream. A stabilizer can afford the ice cream a longer shelf-life though, in principle, this ice cream is designed to be made in front of the customer so it is not altogether necessary. In an ice-cold Nitro Bowl or Dewar basin, place the well-chilled gazpacho and add the nitrogen with the help of a small pitcher while briskly whipping with a mixer to cool down the cream turning it into a creamy ice cream. The amount of nitrogen used will be what is needed; the result will show us if more is

required or if there is sufficient coldness. The result should be a creamy compact ice cream.

White-chocolate nitro ice cream

ingredients: 0.5 l milk, 50 g sugar, 125 g egg yolk, 1 vanilla pod, 200 g white chocolate, 75 g cream, 0.7 l LN2

Infuse the milk with the vanilla. Prepare a very finely textured *crème anglaise*. Add the broken-up chocolate until it melts and has evenly amalgamated with the cream. Place the melted cream in a bowl and blend with a mixer while adding the nitrogen without interruption. Once it has clotted, whip briskly until the structure has been broken, turning it into a frozen but creamy consistency.

Assorted sorbets

Any industrial or homemade coulis can be made into an amazing sorbet. A natural cherry purée thinned slightly with alcohol could be a good combination for you to see for yourself how finely textured a sorbet can be using this technique. It is very similar to the consistency of natural ice cream.

Snows with spray

These dishes are very simple and effective, and can be made with almost any fatty liquid such as olive oil, or flavor with a sugary syrup. For this you need to get a vaporizer (like a glass cleaning agent) or a 0.5-liter siphon bottle without the nozzle and loaded with a gas cartridge and a fine-meshed colander that fits in the work bowl with LN2.

For this preparation, the nitrogen in our container should be totally stabilized, that is to say, without bubbling or effervescence. Submerge the colander and allow it to cool until it has stopped hissing, then vaporize in the centre of the colander. After a few seconds, remove the colander and serve immediately or keep it in an airtight container in the freezer. One common dish made using this technique is olive oil powder.

Powder snows

Simple and productive, this is probably the most effective way to make any solid into a powder in a matter of seconds. It involves submerging a sponge cake, cheese, fruit, etc., in LN2 and once it is ultra frozen, crushing it with an electric mixer such as Thermomix or with a grater. Sometimes a little more LN2 needs to be added when crushing to prevent lumps or clumps.

Cryofreezing

This is one of the basic ways to take immediate advantage of N2. Freezing at extreme temperatures allows virtually any product to be frozen instantly without burning its structure, changing its flavor (rancidity, etc.), damaging its shape or color (fruit and vegetables).

One of the most common techniques is “crackling”: crushing blackberries, raspberries, etc., into perfect crunchy little balls. Another technique is to give unwonted crunchy textures to carpaccios or wafer-thin foods. Yet perhaps the most amazing of all is the ability to give texture to certain vegetables such as leafy greens, flowers or herb or spice leaves.

Shots, drips

Small ice-cold spheres or pearls, both savory and sweet, afford our dishes cold and melt-in-the-mouth sensations. This technique allows you to work in advance and be well-prepared for service or catering.

The use of droppers, small syringes or the ingenious Caviar-Box® can give us surprisingly fast and accurate results.

It is difficult to obtain separate pearls given that the attraction between the drops when submerging in the LN2 makes them stick together, but there is one simple trick to stop that from happening.

Fill a squeeze bottle or syringe with any liquid and trickle on the stabilized nitrogen, which you will have prepared previously. With the help of a spatula, stir in a clockwise motion. At this point and with the other hand, stir the liquid counter-clockwise with the spatula, breaking the whirlpool. This will make the droplets solidify on falling and prevent them from sticking together.

Some liquids react and explode forming structures similar to popcorn. Remember the superb popcorn by Dani García made with tomato water.

Once they have solidified, remove using a spatula with holes and set aside in the freezer until they will be served.

Another version would be, once formed, we cover them with a layer of cocoa butter or melted gelatin, rapidly submerging a portion of pearls, whose entire surface will be coated upon contact with the liquid. Allow them to defrost in the fridge.

When these pearls are eaten they will explode, releasing their liquid inside.

This same technique can be used with scoops or larger whimsical shapes created in molds, frozen in LN2 and enveloped in a coating.

Mousses and foams

Liquid nitrogen is used to cook foods through freezing, and as such, we can prepare any aerated texture such as mousse, foam or air in advance and submerge it in LN2.

If we work with a siphon bottle, we can use almost any foam as an ingredient though we should take the different techniques into consideration. Prepare a foam and make rosettes on top of an ice-cold spoon or, even better, in a small ice cream bag, Salva-G Teppan Nitro or similar appliance so that the foam may be lifted giving it volume. It should never be done directly on the nitrogen.

We can also use warm foams and play around with temperature contrasts. Cold on the outside and hot on the inside!

Foam creations are perhaps one of the most wide-ranging as far as recipes and possibilities are concerned.

Any cold foam can be cryo-frozen using this system and whimsically shaped, almost lunar, rocks can be achieved, coated in cocoa powder, spices, flavored maltodextrin, etc.

“Nitro-dragon”

Nitro-dragon is one of the dishes made popular by El Bulli, the result of playing with temperatures. It begins with making an aerated dish (foam or air) from a recipe, which is subsequently submerged in liquid nitrogen. As the diner eats the nitro-dragon, they literally exhale smoke through their nostrils, as a result of the contrast in temperature between the ice-cold air and the air inside the body.

Another easy and fast way of making Nitro-dragon is to submerge a solid piece of a freeze-dried product, whole raspberries, diced peach, etc., or any other spongy solid that has small air cells in its structure such as popcorn.

It can be served within just a few seconds and diners can witness a large stream of smoke being exhaled from the mouth and nose.

Airs

Airs made with lecithin or sucroester are generally very delicate and rapidly lose their volume because they are fragile and highly aerated. Nevertheless, we can achieve surprisingly ethereal results.

The stabilized air is made and a portion is placed in the nitrogen bath, turned over with a spoon until its entire surface has frozen. This technique generally also causes the dragon effect on eating.

On the griddle

If a griddle cooks and seals foods using heat, the Teppan Nitro imitates the effect but in the reverse order. These griddles allow a thin surface layer of the food to be solidified and “cooked in reverse”.

It is easy, fast and strikingly impressive for dishes prepared in front of the customer.

A rounded foam in the shape of a hamburger, a fully translucent piece of candy, bonbons made of improbable ingredients, etc. There’s an entire world to explore!

One of the most common applications is the making of lollipops.

Chocolate lollipops filled with olive oil, fruit coulis with fizzy sherbet, cocktails… a boundless world teeming with creative possibilities.

Try making a coconut macaroon filled with carrot cream and condensed milk. To do so, prepare a coconut foam and make some discs similar to a macaroon on the Salva-G Teppan Nitro. Once they have solidified, turn then over and fill them with the carrot cream.

And cover the other half with the frozen coconut, simulating the famous dessert. This is confectionary in a minute, made in front of the customer.

Molding

Thanks to the powerful action of the cold we can lend shape to liquids or mousses. Sometimes the molds have to be sprinkled with a non-stick spray to facilitate their later removal.

For instance, if we freeze a tablespoon of nitrogen and submerge it in a liquid, we can see that thanks to its very low temperature it will form an outer layer, thus we can make an inverted concave-shaped mold. Now let us find geometric-shaped metallic molds to make surprising shapes.

Silicon ice-cube molds allow us to freeze any liquid in a few seconds including a high-percentage alcohol such as gin.

Though we should warn you that the materials used as molds should be resistant to this very low temperature.

Yet another and peculiar way of molding a liquid is using a balloon. We saw this technique for the first time on a video by pastry chef Ben Roche, although we do not know who came up with the first nitro-balloon. The technique is simple but clever; place a portion of coulis inside an empty balloon, filling with gas until it has inflated to a suitable size, tie a knot, place the balloon on top of the bowl of LN2 and turn with the palm of your hands so that the coulis hardens inside the balloon's interior surface. Once coagulated, the rubber will be burned by the cold and we can peel the balloon off as if it were dead skin. The final product will be a frozen hollow ball that we can fill with a foam using a needle from the AirKit ® or simply present it as part of the dish.

Nitro spaghetti

Another way of giving molded shapes to a product is nitro spaghetti. To make this, we make a gelatinized strand of spaghetti and on removing it from the tube with the siphon bottle, make it fall into a bath of LN2. It will cryonize instantly, producing fantastic and unique shapes.

Caramelized meringue

A meringue or cryonized cream can be sugared and caramelized with a blowtorch.

Nitro sugar coating

Any cryonized product pricked with a skewer can be submerged in a liquid and an outer layer will be immediately formed. If we submerge it in LN2 again and we dip it again in the liquid, each time a thicker layer will be formed. Thus we can continue rounding the initial produce with different layers of textures and flavors, each layer of which will be well defined on cutting or biting through.

Even if the outer layers are covered, such as with chocolate or cocoa powder or gelatin, a liquid lollipop can be made on the inside.

Salva-G®

120/0002
New radiating Teppan Nitro
with double bath.

3 mm griddle.

Measurements:
270 mm x 210 mm.

Total external measurement of the vessel:
420 x 160 mm.

Double basin vat:
3.5 liters (each basin)

Supplied:
double basin, griddle
and set of two lids.

New Teppan Nitro with double basin! Container with double basin and dual griddle and fry function. Thanks to its outstanding thermal properties, its nitrogen consumption is moderate. The griddle can reach very low temperatures with great stability and response to round-the-clock work.

Experiment with gelatin molds, sugar-coated foams, crunchies, ice-cold fruit wafers, chocolate confectionery, lollipops, decorative cones, ice creams with hot centers, etc. What's more, you can have a bath of LN2 in the other basin to submerge the pieces and chill them so that they last until they are served or make all kinds of Nitro dishes. Lightweight and shock-resistant manufactured in a closed-cell polypropylene container to ensure the utmost hygiene.

Double radiating griddle available for purchase
120/0018

TRICK

Keep the griddle in the freezer. Therefore, by the time you use it, it will rapidly reach the work temperature having consumed barely any nitrogen.

CRYO SPRAY

120/0013
300 ml spray

120/0014
500 ml spray

As if it were a blowtorch, this ingenious tool from the dermatology field allows us to pulverize and instantaneously inject cold air in the form of -196 ºC gas into a product's core, freezing any surface and immediately achieving a crunchy effect on the surface, or a cold centre like ice cream.

Turn your foams into hard rocks that are creamy on the inside.

- Freezing of drinks on the surface.
- Ingenious hollow and refillable chocolate truffles.
- Liquid liqueur ice-cubes.
- Cold sphere shapes…

Perfect control of the cold. Now everything is possible!

DEWAR VESSEL

120/0003

Interior diameter: 20 cm.
Capacity: 3 liters.
Material: borosilicate glass 3.3 (with replacement)

Dewar vessels in the shape of a basin suitable for making ice creams and sorbets with liquid nitrogen, as a container for nitrogen cooking and producing dishes in front of the customer.

DIN/ISO 3585, for LN_2, CO_2 and other refrigerants. Range of use -200 to +200 °C. These vessels are vacuum-insulated, silver-plated and coated with non-magnetic and fully rust-proof aluminum.

CO2 DRY-ICE GENERATOR

120/0015

What is dry ice? Dry ice is the solid form of carbon dioxide or CO2. It is obtained by reducing the pressure and temperature of liquid CO2 in a controlled manner; this makes the CO2 change into pure white snow-like CO2. This snow can be used as it is or can be highly compressed to form tablets or pellets of various diameters.

Instructions for use

1. Screw your pill box onto the CO2 bottle.
2. Try to have the blue curtain closed to prevent the ice from escaping.
3. Gently open the release valve on the CO2 bottle and allow the gas to be released. Upon its high-pressure exit, it will begin to crystallize forming a compact tablet.
4. Close the CO2 bottle valve.
5. Open the curtain and extract the dry-ice tablet.
6. It can produce another tablet right away.

Now you can make your very own dry ice at -78 ºC in just a few seconds, whenever and wherever necessary.

Dry ice is used in the food industry to refrigerate and transport foods that should be kept at low temperatures without exposure to moisture.

However, in avant-garde cooking, it is generally used for visual effects or an aroma vaporizer, as well as fuming and carbonated drinks, fizzy reactions, impressive presentations at buffets, etc.

Making dry ice instantly is easy, safe and does not require much equipment. It can be handled without danger by yourself or fellow diners, and is odorless and tasteless.

This small device should be connected to standardized liquid CO2 containers. Said bottles can be rented from specialist food gas companies, which can provide tailor-made services without difficulty.

We advise against using beer dispenser CO2 bottles.