ICE CREAM
ESSENTIALS









VALRHONA
AUX SOURCES DU GRAND CHOCOLAT®

For 25 years, L'École Valrhona has dedicated its extensive chocolate-making expertise to Valrhona clients and customers.

Created in 1992, after years of extensive work, Pastry Essentials has become an indispensable tool for pastry chefs, chocolatiers and restaurateurs. Containing more than 150 basic recipes made with Valrhona products, it is a valuable reference for professionals. Chefs are free to choose the recipes they wish from among mousses, cremeux, cakes, biscuits and other desserts, as well as the chocolate of their choice and then combine the various elements to create their own recipes, creations and desserts!

Discover this comprehensive tool that will quickly become a "must" in your kitchen!

It was therefore only natural for L'École Valrhona to develop its ice cream expertise in the same way. Thus, Ice Cream Essentials reflects both the expertise of L'École Valrhona and the experience of Alain Chartier, an expert artisan ice cream maker who has been teaching at L'École Valrhona for several years. This close partnership is devoted to understanding and testing a wide variety of ice cream applications, with the ultimate goal of offering the very best ice creams made with real chocolate.

Ice Cream Essentials is both practical and instructive and include:

- **a technological section**, explaining the denomination and composition of ice cream and ingredients, production and storage tips, and the methods for balancing your chocolate ice cream,
- **a recipe section**, based on the various denominations of churned frozen desserts, in addition to recipes for non-churned ice cream and texture agents to enhance your recipes,
- **a merchandising section**, to help you showcase and promote your ice creams to your customers.

ALAIN CHARTIER SHARES HIS KNOW-HOW WITH US!

Artisan ice-cream maker established in Vannes since 2004:
• One of the Meilleurs Ouvriers de France (Best French Craftsmen) for ice cream in 2000 • World Frozen Dessert Champion team in Turin in 2003 • Ranked among the top 5 French ice-cream makers by the Gault & Millau magazine in 2012 • Member of the Relais Desserts International association.
Alain Chartier, world-renowned international consultant, travels the globe to provide ice-cream makers with valuable advice and guidance and discover new concepts. A technological expert, his perfectly balanced frozen recipes are the benchmark for excellent flavor and texture. He currently owns 5 shops in western France and teaches in his "École des Desserts" for gourmet connoisseurs. He develops soft ice cream using his frozen yogurt concept and local products: Yogurt Breizh in stores and street markets. This one-of-a-kind ice-cream expert has become a renowned ice-cream supplier and is contributing to the development of the frozen pastry/dessert sector thanks to his original, gourmet recipes. As consultant and instructor for L'École Valrhona since 1997, he has acquired expertise with Valrhona products that he happily shares in Ice Cream Essentials.

Contents





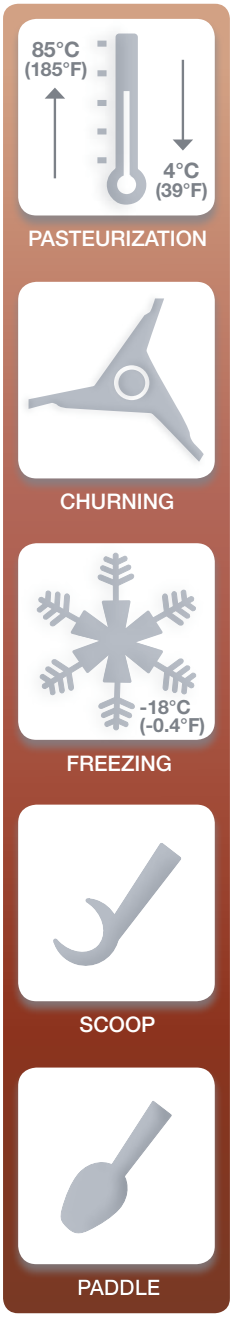
INTRODUCTION

TECHNOLOGY

RECIPES

SHOP

SYMBOLS



Valrhona

expertise

VALRHONA
CHOSEN BY THE WORLD'S FINEST CHEFS

Valrhona is a French chocolate maker that has been purveying exceptional chocolate since 1922. Created by a pastry chef for pastry chefs, Valrhona has for 90 years devoted all of its expertise, exacting standards and passion to serving gastronomy professionals so that each taste is an exceptional experience. Chosen by the world's finest Chefs and confectioners for its extensive aromatic palette, continually enhanced through constant innovation, Valrhona nurtures the ambition of helping people broaden their gastronomic horizons by offering a variety of unique, recognizable chocolate flavors to foster ever-greater pleasure and wonder. Constantly attentive to dialogue and ethics, Valrhona cultivates long-term co-development relationships with growers and leading chefs, in a climate of respect for people and nature.

products

Valrhona provides ingredients of the highest quality so you can create even more delectable and gourmet ice cream. Discover the many flavors and innovative features of our wide range of products:

- **Dark & Milk chocolate couvertures** made from carefully selected cocoas sourced by Valrhona in a variety of different terroirs. From blended origins to single origin chocolates, Valrhona takes you on a journey through a wide spectrum of flavors, which will bring out the nuances of taste in your chocolate ice cream.
- **White Chocolate and our innovative Dulcey Chocolate**, delicious products that will show off all your creative skills.
- **Products made with nuts such as praliné pastes, gianduja-style products and almond pastes**, which result from our traditional expertise in selecting and assembling only the best hazelnuts and almonds.
- **Decorations** to add texture and crunch to your creations, including crunchy pearls, chocolate sparkles, fine chocolate granules, and so on…

l'École Valrhona

L'École Valrhona pastry chefs have worked closely with confectioners from around the world for 25 years, providing daily on-site support. Valrhona has more than 15 consulting pastry chefs who are available to assist customers in developing their professional activities. In coordination with Director of Pastry Innovation and Creation, Frédéric Bau, who is internationally recognized for his professional skills and experience, L'École Valrhona team researches and develops new recipes, pastry concepts, techniques, and equipment. Working closely with specialized engineers, they are able to develop new techniques and a scientific approach to the use of raw ingredients.

Recommendations

As with all raw ingredients, make sure to pay special attention to the way in which you use and store chocolate. To make your work easier and help you use Valrhona chocolate in optimal conditions, here you will find some recommendations and answers to frequently asked questions.

chocolates

Valrhona has developed milk, dark and white chocolate couvertures and baking chocolate products you can use to make exceptional ice cream. Valrhona's art lies in knowing how to choose the very best cocoa beans and balance chocolate formulas to provide you with a range of refined flavors.

DARK

* Non-GMO

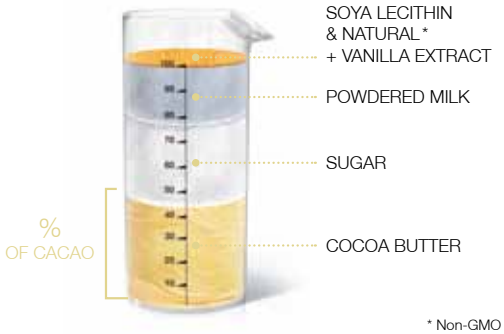
Valrhona dark chocolate is made from cocoa beans of superior origin, sugar, sometimes a bit of cocoa butter (the fat found in the cocoa bean) to improve texture and facilitate enrobing and soya lecithin, an emulsifier that stabilizes the mixture.

MILK

* Non-GMO

Valrhona milk chocolate contains selected cocoa beans, powdered milk, sugar, cocoa butter for smoothness and fluidity, lecithin and a touch of natural vanilla to bring out the flavors.

WHITE



* Non-GMO

Ivoire, Opalys and Dulcey chocolates are composed of powdered milk, sugar, cocoa butter and a touch of natural vanilla. White chocolate owes its finesse to the thorough grinding of the various components. Dulcey chocolate is the result of an original manufacturing process that gives it a unique blond color and toasted flavor.

STORING

CHOCOLATE

All of our chocolates should be stored away from light, dust and moisture, preferably at a temperature of 16 to 18°C (60 to 64°F) with 55% to 60% humidity. In order to preserve the flavor and technical properties of our chocolates, we ask that you observe the storage dates found on the packaging.

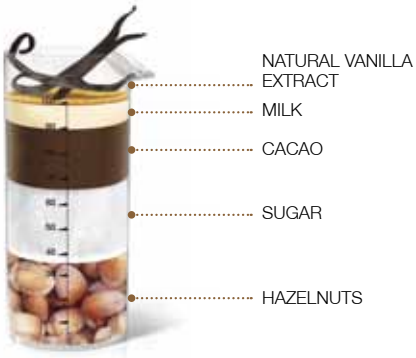
nuts

PRALINÉ PASTES

* Non-GMO

Valrhona praliné pastes are made by blending nuts and sugar according to a traditional hand-crafted process that brings out all the subtle nutty flavors.

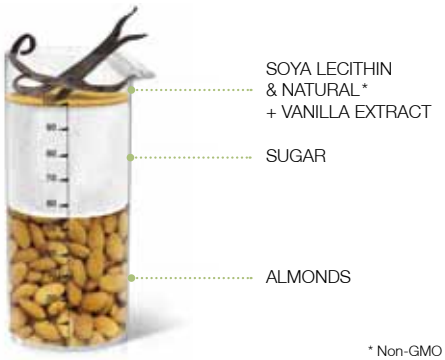
GIANDUJA-STYLE PRODUCTS



Cocoa beans and hazelnuts are roasted separately at specific temperatures and then combined before being ground and conched together.

Valrhona selects
the very best nuts
for its praliné pastes,
gianduja-style products
and almond pastes.

ALMOND PASTES



* Non-GMO

Almonds are blanched, shelled and then cooked in a sugar syrup. The mixture is then ground more or less finely depending on the product's use.

STORING

NUTS

Pralinés and gianduja-style products are dry products that contain fat. They should be stored in a cool, dry, dark place at 20°C (68°F) maximum.
Almond pastes containing 50%, 55% and 70% almonds are moist products. They should be stored in a cold, dry place at 8°C (46°F) maximum, as they are susceptible to mold.
Almond paste containing 33% almonds is less fragile. We recommend storing it at 15-16°C (59-60°F) maximum.

Guide to churned ice denominations

Preliminary Note

The descriptive definitions below are to be used in conjunction with the Compositional Standards chart as follows.

Edible ices for which one may only use Dairy Fat and/or Dairy Proteins may however also contain:

a. fats and/or proteins derived from eggs;

b. flavouring matters in which Fats and/or Proteins are naturally present;

c. authorized additives in which Fats and /or Proteins are naturally present;

d. gelatin.

Compositional Standards

DENOMINATIONS	MSNF	PROTEINS		EDIBLE FATS		EGG YOLK	FRUITS			
		Dairy	non Dairy	Dairy	non Dairy		Ordinary	Acid	Strong Flavour	Nuts
Water Ice										
Ice Cream		Optional		Mandatory						
Milk Ice	6% min.	yes	Excluded	2,5% min.	Excluded					
Egg-based Ice Cream		yes	Excluded		Excluded	7% min.				
Dairy Ice Cream		yes	Excluded	5% min.	Excluded					
Fruit Ice							15%	10%	10%	5%
Sorbet							25%	15%	15%	7%

1. The denominations Water Ice or Ice Lolly, Wassereis, Waterijs, Glace à l'eau, Glaçon, Limonadeis, Ghiacciolo, Helado de Agua, Pagoto Granita, Gelado de Água, Is/Ispinne

   are reserved for a product complying with the basic definition and containing mainly **water** and **sugars**.

2. The denominations Ice Cream, Eis, Ijs, Glace, Is, Gelato, Helado, Pagoto, Gelado, Glass

   are reserved for a product complying with the basic definition and being an emulsion typically composed of **water and/or milk, edible fats, proteins and sugars**.

3. The denominations Milk Ice, Milchspeiseeis, Melkijs, Glace au Lait, Maelkeis, Gelato di Latte, Helado de Leche, Pagoto Galaktos, Gelado de Leite, Mjölkglass

   are reserved for a product complying with the basic definition and containing **at least 2.5% of exclusively dairy fat and at least 6% of Milk Solids-Non-Fat** (see p.20) excluding any fat and/or protein other than of dairy origin (see Preliminary Note).

4. The denominations Egg-based Ice Cream, Eis mit Eiern, Ijs met Eieren, Glace aux Œufs, Aeggebaseret Is, Gelato Alle Uova, Helado de Huevo, Me vasi to pagoto me avga, Gelado à base de ovo, Glass med ägg

   are reserved for a product complying with the general definition and containing **at least 7% egg yolk and exclusively dairy fat excluding** any fat and/or protein other than of dairy origin.

5. The denominations Dairy Ice Cream, Eiskrem, Roomijs, Crème Glacée, Floedeis, Crema Gelato, Helado Crema, Pagoto Krema, Gelado de Nata, Gräddglass

   are reserved for a product complying with the basic definition and containing **at least 5% Dairy Fat, excluding** any fat and/or protein other than of dairy origin (see Preliminary Note).

water - fruit ice

6. The denominations FF Fruit Ice, FF Frucht Eis, FF Vruchtenijs, Glace aux Fruits à FF, FF Frugtis, Gelato alla Frutta, Helado de Frutas, Pagoto FF, Gelado de Fruta, Fruktis

are reserved for a product complying with the definition of 1. above and containing at least 15% fruit. For certain fruits this content may be reduced, the conditions for which are defined in Appendix I.

7. The denomination "Sorbet"

is reserved for a product complying with the basic definition which contains no added fat. The product must contain the characterizing foodstuff(s) to which reference is made in words, particulars, trademarks, brand name, pictorial matter or symbols, when the foodstuff(s) is/are known to be consumed as such.

When reference is made to fruit(s) or vegetable(s) in words, particulars, trade-marks, brand name, pictorial matter or symbols, the fruit(s) or vegetable(s) con-tent must be at least 25%.

- The fruit(s) content may however be reduced respectively to 15% and to 7% for those fruits which are listed non-exhaustively in Appendix II.1.
- The vegetable(s) content may however be reduced to 10% for those vegetables which are listed non-exhaustively in Appendix II.2.

In the case of use of characterizing foodstuffs not intended to be consumed as such (spices, herbs, plants and part of plants…), the presence of solely non-natural flavourings and/or flavourings, as described in Art 16.6 of the flavourings Regulation 1334/2008, is not allowed.

Including the names:

FULL FRUIT SORBET
Reserved for sorbets such as defined in section 7., and containing at least 45% fruit (20% for acidic fruits).

SORBET WITH "ALCOHOL" OR "FLAVOURING"
Reserved for ices or sorbets such as defined in section 1., a mixture of water and sugar, with no added Dairy Fat, and containing alcohol or a flavouring (other than fruit) in sufficient quantity to give the product a particular flavour characteristic.

Appendix

APPENDIX I- Fruit ice

Fruits for which the content may be less than 15% fruit :

a) Minimum content reduced to 10% for:

- citrus fruit, namely lemon, orange, mandarine, tangerine, grapefruit, etc. ;
- other acidic fruit, i.e. fruit or fruit mixture the juice of which has titratable acidity, expressed as citric acid, of at least 2.5%;
- exotic or special fruit with a strong flavour and/or a thick consistency such as pineapple, banana, corossol, cherimoya, guanabana, guava, kiwi, lychee, man-go, passion fruit, etc.

b) Minimum content reduced to 5% for :

- Nuts and nut preparations.

APPENDIX II - Sorbet with reference to fruit(s) – vegetable(s)

1. Fruits for which the content may be less than 25% fruit:

a) Minimum content reduced to 15% for :

- citrus fruit, namely lemon, orange, mandarine, tangerine, grapefruit, etc. ;
- other acidic fruit, i.e. fruit or fruit mixture the juice of which has titratable acidity, expressed as citric acid, of at least 2.5% ;
- exotic or special fruit with a strong flavour and/or a thick consistency such as pineapple, banana, corossol, cherimoya, guanabana, guava, kiwi, lychee, man-go, passion fruit, etc.

b) Minimum content reduced to 7% for

- Nuts and nut preparations.

2. Vegetables for which the content may be less than 25% vegetables :

a) Minimum content reduced to 10% for :

- vegetables with a strong flavour and/or a thick consistency such as celery, green or red pepper, turnip, pumpkin, etc. ;

IMPORTANT

This text is a summary of the Code for Edible Ices. The full European reference code can be found at www.euroglaces.eu.

It also contains information from the Code of Edible Ices Fair Business Practices written by the French Ice-Cream Maker Federation (CNGF).

The information given here is provided for reference only and cannot replace the regulations in force.

SOURCES
Euroglaces code
www.euroglaces.eu
and CNGF
(French Ice-Cream Maker Federation)
guide to denominations.

Guide to denominations of non-churned frozen desserts

1. "Pâte à bombe" mixture

"Pâte à bombe" is a light mixture obtained by combining egg yolks and sugar syrup, either by cooking lightly in a bain-marie between 82°C (179°F) and 85°C (185°F), or by using a concentrated syrup made by cooking sugar between 110°C (230°F) and 120°C (248°F).
Aeration of a "pâte à bombe" mix by cooking over a bain-marie (light "pâte à bombe" mix) is more stable than when made with cooked sugar (firm bombe mix). A bombe mix is used as a base for making frozen parfaits and iced bombes.

2. Iced parfait

An iced parfait is a light dessert obtained by combining a "pâte à bombe" mixture with whipped cream. It can be flavored with natural flavorings or alcohol.

3.1. Iced bombe mix

An iced parfait is a light dessert obtained by combining a "pâte à bombe" mixture with whipped cream. It can be flavored with natural flavorings or alcohol.

3.2. Iced bombe or "bombe glacée"

The term "iced bombe", "bombe" or "bombe glacée" denotes a frozen dessert made by layering one or more layers of standard ice-cream with an iced bombe mix, which may contain added dried fruit or nuts, candied fruit, chocolate chips, sugar drops, caramel, coulis, etc.
The iced bombe mold can be lined with a thin layer of chocolate or a crisp or crunchy ingredient, such as nougatine, feuilletine, puffed rice or other chocolate- or sugar-based product (not biscuit). If another type of lining is used, the dessert is no longer classed as an iced bombe but as a frozen dessert.

4. Frozen fruit parfait

Definition No. 1
A fruit parfait is a light dessert obtained by cooking the fruit puree, egg yolks and sugar at a temperature of 85°C (185°F) or at simmering point 90°C (194°F), followed by cooling the mixture whilst stirring until completely cold, then adding whipped cream. The following ingredients are also commonly added: 0% fat powdered milk (2%) and 50°vol alcohol (3% - 6%).

Definition No. 2
A fruit parfait is a light dessert obtained by combining a "pâte à bombe" mixture with fruit puree and whipped cream. Gelatin is also commonly added.

5.1. Iced mousse or Ice milk parfait

Natural flavorings – spices – alcohols
An iced mousse or iced milk parfait is a light dessert made by preparing an egg custard, to which whipped cream is added. It may also contain Italian meringue. Thickeners may also be added (maximum 1.5%). The term "sugars" means that iced mousse can be made not only with "sucrose", but permits the use of other sugars as well (glucose, honey, invert sugar, etc.).

5.2. Frozen fruit mousse

Definition No. 1 – with sugar syrup
A frozen fruit mousse is a light dessert made by mixing fruit (juice or puree), sugar syrup and whipped cream. A thickening agent may also be added.

Definition No. 2 – with meringue
A frozen fruit mousse is a light dessert made by mixing fruit (juice or puree), meringue and whipped cream.

6. Frozen soufflés and frozen fruit soufflés

A frozen soufflé is a light frozen dessert consisting of a "pâte à bombe" mix, Italian meringue and whipped cream.
A frozen fruit soufflé is a light frozen dessert consisting of a mixture of fruit puree or juice, a "pâte à bombe" mixture, Italian meringue, and whipped cream. Fruit soaked in alcohol or semi-candied fruit may also be added. Dried fruit or nuts or nougat may be used as a garnish.

7. Iced nougat

Iced nougat is a light dessert consisting of a mixture of Italian meringue made with honey and whipped cream, roasted nuts and candied or semi-candied fruit. Nougatine may be added as a garnish.
As with confectioner's white nougat, iced nougat can be flavored with natural flavoring (coffee, chocolate, pistachio, alcohol, etc.)

8. Zabaglione (Sabayon)

Zabaglione, or sabayon, is an Italian specialty made by beating egg yolks and sugar together over a bain-marie at a temperature of 45°C (113°F) and then adding wine (champagne, sweet white wine, port, marsala, sherry, madeira, etc.) and whipped cream when cold.
This type of dessert can also be made using a custard base: wine, egg yolks, sugar cooked to 85°C (185°F).

9. Granita

Granita is a type of sorbet, made using a simple fruit, wine or alcohol syrup. No stabilizers are used. The density of the syrup is such that it allows the structure to crystallize slightly. Fruit granita should have a density of around 1074g/L. The sugar content of granita is measured in degrees Brix (between 17°Bx and 23°Bx). A refractometer can only be used for fruit granita, as alcohol gives a false reading (granita made with wine, liqueur, brandy, etc.). Granita can also be made with coffee or chocolate.

10. Coulis

Coulis is made with fruit, wine, caramel or chocolate, to which a syrup, sugar or alcohol is added. There are two types of coulis, one served to accompany or coat a dessert, the other as a filling. The latter must still be liquid when the ice cream is cut. A coulis served as a garnish generally consists of fruit pulp or juice and a syrup with a density of 1260g/L, with or without a thickening agent (gelatin, pectin, glaze).

11. Ganache filling

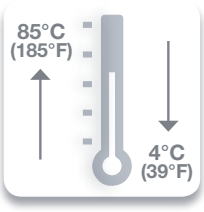
Ganache used as a filling for ice cream is a soft mixture containing a large quantity of sugar or alcohol. It can be used as a lining or layer but is still soft when the ice cream is ready to eat.

12. Glaze

A glaze is a neutral or flavored mixture used to cover ice cream, frozen desserts, iced bombes, etc., to give them a smooth, shiny appearance and a nice finish. A glaze helps frozen products keep better and helps protect them from oxidation or the formation of a skin on the surface of the ice cream. Glazes can be made with pectin, gelatin, fruit or chocolate. They should remain shiny even when cold.

SOURCE
Guide to Denominations, CNGF (French Federation of Ice Cream Makers).

The information given here is provided for reference only and cannot replace the regulations in force.



Manufacturing

processes & equipment

Here we break down every stage of the manufacturing process to ensure that all products are made in compliance with health and safety guidelines for ice-cream making.

First, suitable equipment must be used, as this will determine the choice of ice-cream type and quantity you are able to make.

- A **pasteurizer**, either independent or part of an ice-cream churner, with highly variable capacity and able to complete a full pasteurizing cycle.
- A **homogenizer** is used after pasteurization, to refine and disperse fat molecules and produce a smoother ice-cream mixture.
- An **aging machine** to keep the mixture at a constant +4°C (39°F), so that the ice-cream's flavor can develop, with each ingredient playing its part.
- You are free to choose between **vertical or horizontal churns**, **soft ice-cream machines**, **and continuous freezers**, in the knowledge that the quantities processed will be entirely different.
- A **deep freezer** or **fast-cooling unit (blast freezer)** ensures that the ice cream remains stable during storage and prevents the "free-roaming" water from crystallizing into flakes.
- Other small items of equipment are available to help professional ice-cream makers perform technical operations. They will also need two key utensils: a thermometer and a refractometer.

choosing ice-cream type

You will need to choose the type of ice cream you want to make for a particular recipe from amongst the various denominations: sorbet, chocolate granita, ice cream or milk ice, etc.

Products like "ice cream, dairy ice cream, sorbet, etc." are carefully made using high-quality foodstuffs and are part of every professional's repertoire.

All the different names for such preparations are listed in the guide to the denominations and manufacture of frozen desserts by CNGF (French Federation of Ice Cream Makers), which served as a reference for this book.

production stages

Weighing and measuring ingredients: this must be carried out meticulously in order to ensure that products are always made correctly and that consumers are always offered top quality, identical frozen products.

Cooking and pasteurization: whether completed in a saucepan, cooker or pasteurizer, these processes blend the ingredients thoroughly so that customers can enjoy ice cream that has a distinct flavor and a fine, smooth texture.

We recommend that you proceed in the following logical order when mixing your frozen desserts, so as to achieve a high-quality frozen product that will remain stable for as long as possible and thus respond better to storage, display and client transport.

processes

EXAMPLE OF EGG-BASED ICE CREAM

Pour water or milk into the cooking appliance.

At 25°C (77°F), add powdered milk. At 30°C (86°F), add all sugars at once to obtain a "milk syrup", which will freeze at a lower temperature. At 40°C (104°F), incorporate all fats and fatty ingredients (cream, egg yolks and chocolate). At 45°C (113°F), finishing adding ingredients by incorporating the stabilizer/emulsifier mixture combined with some of the original sugar (about 10%).

Pasteurize the resulting mixture at 85°C (185°F) for 2 minutes then cool rapidly to + 4°C (39°F). If possible, homogenize the mixture so as to produce and disperse the finest fat molecules possible. Leave to age for at least 12 hours. Blend and churn between -6°C (21°F) and -10°C (50°F). Store in a freezer at -18°C (-0.4°F).

Conservation & storage





production : cooling for better quality finished products

There are two types of cooling systems: mechanical cooling and cryogenic cooling.
Mechanical cooling: system with evaporator, compressor, pressure reducer etc.
Cryogenic cooling: freezing with liquid nitrogen takes only a few minutes and results in a creamier ice cream due to smaller crystal grains.

Deep freezing is the most appropriate way to cool the ice cream core down to -18°C (0.4°F) as quickly as possible. Hardening is carried out in a ventilated container at a temperature of less than -35°C (-31°F), so as to cool down the core of the product to a temperature of -18°C (0.4°F) or less, in order to preserve the structure of the finished product and optimize its quality during storage.
For **information purposes**: the hardening speed (i.e. transition from the temperature the ice cream is taken out at to the temperature at which almost all the water is frozen) is 1 degree centigrade per hour. Example: the deep freezing time of ice cream taken out at -6°C (21°F) and cooled down to -20°C (-4°F) is at least 14 hours.
Slow freezing due to inappropriate temperature would render the product unstable, causing it to collapse, triggering the separation of the raw ingredients and the appearance of large water crystals. It is recommended to store fragile products at -25°C (-13°F) for desserts, individual portions or frozen nibbles.

special storage conditions

Frozen products must be stored at a constant temperature of -18°C (0.4°F) or below to guarantee food safety (no microrganism development) and to protect the texture, flavor and taste qualities of the product.
Example of storage condition indications: "Store at negative temperatures (below zero), equal to or less than -18°C (0.4°F). Do not refreeze a defrosted product."

DURABILITY DATE: USE-BY DATE OR BBD
Pre-packaged ice-cream products, presented for sale to consumers, must feature a **Best by Date (BBD)**. For example, "Best before: End of October 2016". This is the date up to which the manufacturer guarantees the texture, flavor and taste qualities of the product.
The **Use by Date** is the latest date the product can be consumed without posing any risk to the consumer's health. Ice cream stored at a temperature of -18°C (0.4°F) or less is not affected by the use-by date. Ice-cream confectioners are not required to affix a use-by date on the ice-cream products they manufacture themselves and sell pre-packaged.

HOW TO DETERMINE A BBD?
It is the manufacturer's responsibility to define the criteria determining the product's texture, flavor and taste qualities and for how long these properties are maintained in the storage conditions defined. The best way to evaluate a BBD is to monitor the aging of the product (visual appearance, taste, microbiology) under normal storage, selling and transport conditions. The guidelines for good manufacturing practices defined by professional bodies can help with this process. Generally speaking, ice cream that has been produced under strict hygiene conditions, using healthy raw ingredients, can be stored for several months.


labeling and consumer information

As with anything sold, the product must be accompanied by each country's required regulatory information. Depending on the selling method (in bulk or pre-packaged), the regulatory information can be conveyed: **orally, during the sale or display of the information in the store OR by labeling the product.**

Labeling information is **regulatory and mandatory**:
For pre-packaged products (ice-cream tub), the following information must feature on the product label: • **Name under which the product is sold** • **List of ingredients and allergenic ingredients in bold** • **Allergen information ("May contain… ")** • **Quantity of the ingredients highlighted on the packaging** • **Net quantity (weight)** • **BBD** • **Storage conditions** • **Name and address of the person responsible/ manufacturer** • **Instructions for use (if necessary)** • **Nutrition declaration** • **Batch number.**

This compulsory information can be completed with promotional statements on the product. Note: these may also be regulated. For example: "Home-grown products", "Home-made", "Traditional Artisanal Methods", etc.

This information is provided in accordance with good practices for consumer information.

In all cases and most importantly, we recommend seeking specific advice from the appropriate authorities.

Ingredients
Composition and role

An edible ice is neither a liquid nor a solid, but rather a mixture of solids (dry extracts), liquid and air. We will refer to all ingredients that are not frozen as the **ice-cream mixture**.
In ice cream, the mass is never entirely frozen. As the freezing temperature is never low enough, only 2/3 of the water is frozen, on average, and this water therefore contains a high concentration of the dissolved substances. The raw ingredients in ice cream should be distributed in particles that are as fine as they can possibly be and should be dispersed throughout the mixture to ensure that the finished product is of good quality.
An ice-cream recipe formula consists of water and solids (dry extracts). The total quantity of dry extract in an ice-cream mixture comprises all elements held in suspension or in a true solution in the mixture, which remain as a measurable mass once the water has been evaporated, in an oven or by any other means.

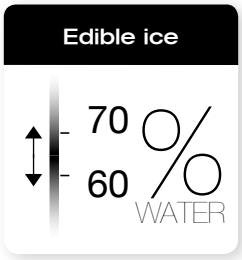
Ice cream is a subtle balance of water, sugars, non fat milk solids (MSNF), fats and air.

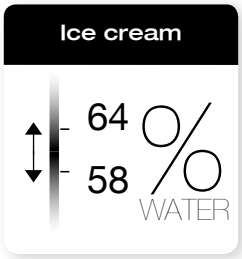
ice cream = balance : water sugar MSNF fat air

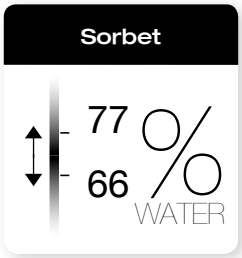
We shall now look at each item, one by one, so as to understand what makes the perfect balance of ingredients and examine the criteria used to judge the quality of the body and texture of the finished products, which are:

• finess of texture • lightness • creaminess.

- **Finess of texture** refers to the size of the ice crystals, which depends on a host of factors:
  - choice and percentage of raw ingredients,
  - choice and percentage of stabilizers,
  - observance of the stages of production,
  - speed of freezing.
- **Lightness** refers to the size and number of air cells.
- **Creaminess** depends partly on choice and quality of raw ingredients but is primarily the result of a well-balanced formula and adequate percentages of fats and MSNF.







water

Edible ices consist mainly of a high percentage of water (60 - 70%).
The quantity of frozen water is higher if the ice-cream mixture is frozen at -30°C (-22°F) rather than -18°C (0.4°F). The percentage of "free-roaming" water depends on the composition of the formula, that is, the quantity of solids it contains (total dry extract in the formula).
Ice cream contains between 58 - 64% water; sorbet between 66 - 70%.
Churning at -9°C (15.8°F) will freeze around 50% of the water in an ice-cream mixture and the rest is frozen when the ice cream is put in the freezer. Moreover, the faster the freezing the smaller the ice crystals.
The aim therefore is to bind as much of the water as possible, rather than having it as "free-roaming" water, as the latter can cause ice flakes to appear during freezing or prolonged storage. Ingredients that absorb water include sugars, milk proteins and stabilizers.
Obviously, the water used must be bacteriologically pure: this should be checked annually to guarantee safety.

milk

The term "milk", when used on its own without any information concerning from which animal it came, refers to cow's milk only. Milk consists of a large quantity of water and almost equal amounts of carbohydrate (lactose), protein (casein) and fats (milk fat).
Whatever milk is used (whole, semi-skim or reconstituted), its organoleptic and bacteriological properties and the regularity of its fat content levels are extremely important. The fat content of the milk must be known and taken into consideration when considering the overall balance of the recipe.
Two other forms of milk can be used:
- nonfat powdered milk (see paragraph on MSNF)
- evaporated milk, where 55% of the water has been removed.

Alternatively, vegetable fats can be used to address the issue of milk allergy, including soya milk, almond milk and rice milk.

sugars

Here we must distinguish between sugar and sugars. From a chemical point of view, sugars are carbohydrates. Our diet includes various types of carbohydrate, which are differentiated by the length of their molecule chains. For example, starch (the main carbohydrate present in cereals and potatoes) has a very long chain containing over 600 molecules, whereas lactose (the sugar found in milk) and fructose (fruit sugar) have only 2 molecules.

A key ingredient in ice-cream making, sugars play a vital role because of their many different actions:

- they **add taste** to ice cream through their various sweetening powers, which may be greater or lesser depending on the type of sugar,
- they **bind "free-roaming" water**, thus preventing the formation of ice flakes,
- they make ice cream **smoother** and **creamier**,
- they **affect the speed** at which ice cream melts,
- they affect the **color** of the ice cream,
- they **preserve the ice cream's flavor** during ageing.

As a rule, ice-cream makers use a mixture of sugars so as to combine:
- their technological properties regarding sweetening power,
- their functional properties, particularly with respect to influencing the freezing point.

To help you understand what they do, we will now look at the most common sugars and recommend the quantities to be used.

sucrose

Sucrose is commonly known as sugar. It is a carbohydrate. It is made of one glucose molecule and one fructose molecule. It is a benchmark for measuring the sweetening power of other sugars: its sweetening power is therefore 1.
In use:
- too much sucrose makes ice cream look soft and shiny and gives it a sticky texture,
- too little sucrose results in solid, dense ice cream.

Dissolved in the ice cream's liquid component, sucrose **affects the texture of the ice cream** as well as its freezing point.

sucrose
sweetening power
= 1

atomized glucose, powder

Glucose syrups and dehydrated glucose are made by acidic and/or enzymatic hydrolysis of refined corn or wheat starch. The solution is then spray dried; it is often used as a powder.
Depending on their composition, glucose syrups are allocated a Dextrose Equivalent score or DE. The Dextrose Equivalent is the best criterion for measuring the various functional properties of glucose syrups.
Sweetening power varies from 0.16 to 0.50 for powdered glucose and 0.4 for glucose crystals.
The most commonly used powdered glucoses are 36/39 DE for traditional frozen products, 20/23 DE for alcohol or liqueur flavored sorbets, and 60/65 for glazes.
In ice creams and sorbets, glucose has a water-retaining action: it prevents ice cream from melting too quickly when eaten, and affects the size of the ice crystals. Its high dry-matter content and anti-crystallizing qualities play an important part in achieving a balanced recipe.

Large doses of glucose make ice cream elastic and rubbery. **A maximum quantity of 5 to 8% is recommended**.

atomized glucose
sweetening power
from 0.16 to 0.50

glucose crystals
sweetening power
= 0.4

invert sugar

Invert sugar's sweetening power is higher than that of sucrose. Owing to its consistency, it is often likened to honey, but has a different structure. It is made by the acidic or enzymatic hydrolysis (use of invertase) of sucrose to obtain glucose, fructose and sucrose. It has a sweetening power of 1.25 and its incorporation percentage varies between 1 and 4%. It provides **anti-crystallizing properties**, by getting between sucrose molecules and preventing the formation of crystals, and, owing to its significant ability to stabilize water molecules in an ice cream mix, it increases the ice cream's softness and plasticity. The **recommended amount** to use is between **2 and 5% maximum**. As a rule, invert sugar is used for its moistening properties when making harder ice creams, such as chocolate, praliné and pistachio.

All the recipes in this Ice Cream Essentials have been balanced with invert sugar at 78° BRIX.

invert sugar
sweetening power
= 1.25

honey

Honey is a natural sweet substance produced by bees. It consists mainly of **fructose** and **glucose**. Its taste and aroma vary according to the flowers visited by the bees. No two honeys are the same, either in structure or flavor, however, it is mainly used for its flavor.
The incorporation percentage for honey varies between 5 and 10%, depending on the desired taste. It **makes ice cream softer** but **hastens the time** it takes to melt as its properties are similar to those of invert sugar, which it closely resembles.

dextrose

This sweetener is often used in Italy to replace powdered glucose, with advantages and disadvantages. An amount of 3 to 5% of the total recipe is recommended. Dextrose is obtained by the process of enzymatic hydrolysis from purified corn starch, which is refined and then crystallized. **Its role** in ice cream is to **lower the freezing point**, which improves texture without posing crystallization problems. It is a dry matter (96%) with an average sweetness of 0.75. It **leaves a feeling of freshness in the mouth**. Dextrose powder is white and does not stick to hands, plus it gives ice cream that typical glossy finish.
In France it is used less, in part because of its greater sweetening power.

dextrose
sweetening power
= 0.75

lactose

This is the sugar naturally present in milk. It is rarely added directly, but is found in fat-free powdered milk.
A great advantage is its low sweetening power (around 0.16%), but unfortunately it does not dissolve easily, requiring **ten times its own weight in water to dissolve; otherwise, the ice cream will have a sandy texture in the mouth.**

lactose
sweetening power
= 0.16

other sugars

- **Maple syrup**: made by reducing the sap of certain varieties of maple. It is used both for its **flavor** and to give a product a specific regional character.
- **Agave syrup**: made in Mexico from several varieties of the agave plant. The extracted juice is processed to make a liquid syrup, but viscous, with a honey-like consistency. **Rich in natural fructose** it is often labeled "organic".
- **Grape sugar**: extracted from grape must, **it looks like white invert sugar**. It too is often labeled "organic".
- **Rice syrup**: made by slowly fermenting rice starch, which naturally changes into various carbohydrates. The advantage of this syrup is that it is **mineral-rich** but **calorie-poor**.

polyols

Polyols taste sweet but are not sugars. Their main advantage is that they do not cross the intestinal barrier. They are naturally occurring sweeteners. The best ones to use are **maltitol, sorbitol and isomalt**. They all have less sweetening power than sucrose.

Note that these additives are regulated and must be specifically mentioned in the list of ingredients.

fats

A premium artisanal ice cream contains between 8 and 10% fat. This percentage refers to the total fats present, including milk, other dairy products (cream and butter) and flavorings (chocolate, hazelnut, almond, etc.). If the percentage is higher than this, the fats could separate out during the churning process. The fat globules **must be as fine as possible so that the ice cream is creamy and well-aerated**. The homogenization step, which follows the hot pasteurization step, further refines the process.

milk fats

cream and butter

The word "cream" refers to milk containing at least 30 g of fat per 100 g. Cream and butter are texturing agents as they crystallize when cold and therefore thicken the mixture, making it **creamy** and **soft** to eat. Owing to their protein content, fats affect the stability of the mixture and the foam, the aeration level and the texture of the product during storage. They play an essential part in taste as they preserve the taste of the flavorings. The best flavor is obtained by using pasteurized dairy products, as this method of heat treatment preserves the products' texture, flavor and taste qualities as much as possible. Note that if an ice-cream mixture containing butter is left to rest, the fats will rise to the surface. It is therefore preferable to leave such a mixture to age in a pasteurizer whilst being continually stirred. Fats also have a role to play during churning where they create a kind of physical barrier that prevents the ice crystals from getting too big.

vegetable fats

cocoa butter, hazelnut oil, etc...

A wide variety of vegetable oils are available, all of which have different properties. Their **taste**, and sometimes their **action**, can **change** according to the ingredients used. During churning, they also help to aerate the mixture. Inexpensive foaming agents are commercially available and can be used but the quality of the ice cream may be adversely affected.
As fats in flavorings are taken into account when considering whether a formula's ingredients are correctly balanced, they affect the quantity of fatty flavorings, cream and milk that should be used. Cocoa butter is solid when cold, so this must be compensated for with a dry agent or sweetener to reduce its hardness.

M.S.N.F. milk solids non fat

Powdered milk is milk from which nearly all water has been removed (97%), but the vast majority of other components have been preserved – only a few extremely heat-sensitive vitamins are destroyed. Powdered milk can be whole milk, semi-skim or skim. Skim milk is the preferred choice as the fats it contains are cooked and can take on a caramelized flavor. To achieve the caramelized milk flavor typical of Italian ice cream, sweetened condensed milk is the best option. Milk proteins have an important role to play in producing a balanced ice cream. They should account for around 8 or 9% of the total weight, any more and the lactose runs the risk of crystallizing if the ice cream is kept very long.

nonfat powdered milk

The 0% fat powdered milk used in making artisanal ice cream consists mainly of **3% protein** and **53% lactose.** There are often moisture–related problems associated with its use, as it requires at least 10 times its weight in water (when being dissolved) to fully dissolve (see manufacturing process).

eggs and egg products

For egg- or cream-based ice creams, fresh, powdered or pasteurized egg yolks may be used. They are added to the percentage of fats in the formula. The proteins in the eggs act as binding agents: when hot, they coagulate and thicken the mixture, whereas when cold, the proteins become firmer.

Egg yolks have significant **emulsifying** action due to their lecithin and protein content. They stabilize the dispersion of fat globules in the mixture and also play a part in aerating the ice cream and binding air bubbles in the mixture during churning.

Egg yolks contain 33% fat, which has a direct impact on **texture** and **flavor as well as preserving the taste**. Finally, the color of egg yolks is due to the presence of the pigment xanthophyll. There is often a higher percentage of it in vanilla ice cream than in other flavors of ice cream.

additives in ice cream

The two families of additives used in making ice cream are **stabilizers** and **emulsifiers**. They are essential ingredients if you wish to keep your ice cream for several days, as they enhance its texture, flavor and taste qualities during storage and eating.
They are subject to compulsory, regulated codification - the reference numbers start with E for European.

stabilizers

The following stabilizers are the only ones authorized for use in making ice cream: Sodium alginate (E401), Ammonium alginate (E403), Agar-agar (E406), Locust bean gum (E410), Guar gum (E412), Xanthan gum (E415), Pectin (E440), Cellulose gum (E466), Gelatin and Casein/ caseinate.

These substances are all hydrocolloids, which means that they can absorb large quantities of the "free-roaming" water in a preparation. Their thickening and gelling action affects the consistency and body of edible ices. Because they bind to a large part of the water that makes up the mixture, they reduce the formation of ice-crystal flakes, improve aeration and increase the mixture's viscosity, so that it feels softer in the mouth. They also have a stabilizing effect, improving the ice cream's keeping qualities and ensuring it melts more slowly, as well as keeping the mixture in its intended state (e.g. in ice cream and iced desserts made with cream, they ensure that the mixture remains as an emulsion). For good results, stabilizers should be mixed with 10 times their weight of sugar to facilitate dispersion in the solution and prevent lumps from forming, and they should be added at a temperature of at least 45°C (113°F), which is the temperature at which they will begin soaking up the liquid and swell.

It is important that your clients realize the extent to which these additives and their actions are of natural origin, as this influences their product choice and their trust in you, owing to the amount of information available concerning the harmful effects of certain ingredients (allergies, religious dietary restrictions, hyperactivity, etc.).

USE OF
stabilizers
& emulsifiers
= 1%
MAXIMUM

emulsifiers

Used exclusively in ices, ice cream and sorbet containing fat. Natural emulsifiers can be used (lecithin and protein in egg yolks), as can added lecithin (E322) or mono- and diglycerides of fatty acids (E471, E472).

These surfactants are able **to bind a product's water and fats together**. They stabilize the fat globules in the mixture and bind any remaining "free-roaming" water molecules. Emulsifiers make an ice-cream mixture more homogenous by dispersing the fat globules throughout, imparting a smooth , creamy texture as well as facilitating aeration during churning.

Combinations of the two (stabilizers and emulsifiers) are also available commercially, when you wish to use both (for mixtures containing fats only).

The maximum quantity of emulsifiers and stabilizers that should be added is 1%, while the ideal amount for churned ice cream **containing around 8% fat is 0.4%, on average**.

How to balance chocolate ice cream?

Chocolate Analytical Table

The role of an analytical table is to provide you with information about the balance of components, including the dry extract of the product, fat content, sugar and MSNF*, in order to achieve a certain texture after churning.

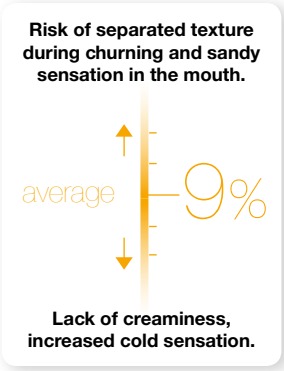
- Before starting, determine the denomination desired: milk ice, dairy ice cream, egg-based ice cream, etc.

Let us use the example of a milk ice made with Caraïbe 66%.

1 FAT

Determine the % of fat

It should be approximately 9% of the total weight of your recipe.

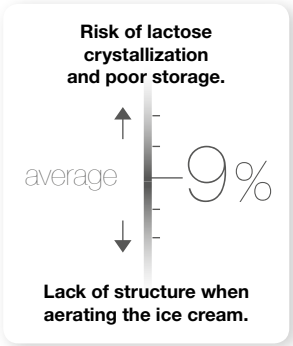


2 MSNF

Choose the % MSNF in the mixture

It will provide the framework for the aerated ice cream.

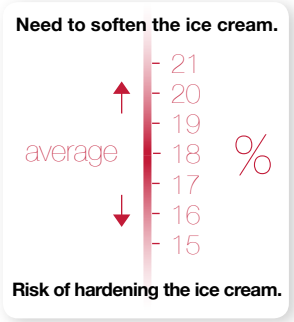
* Milk Solids Non Fat



3 SUGAR

Choose % of each sugar

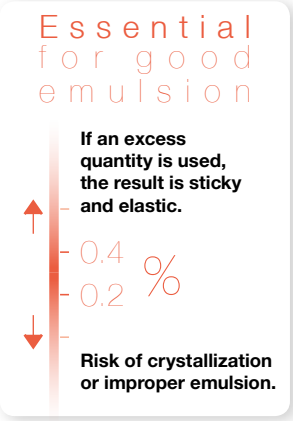
Depending on the desired texture and the sweetening power intensity with regard to your choice of chocolate.



4 STABILIZER & EMULSIFIER

From 0.2 to 0.4%

It will be essential to the ice cream's structure during freezing.
If worked directly without conservation: pointless, as there is not enough time for it to act.



5 TOTAL DRY EXTRACT

indicates texture of the finished product.

The ideal amount is 39% for a plain ice cream.

1. CHOICE OF INGREDIENTS FOR 10KG OF ICE-CREAM MIXTURE

• Choose and define the amount of flavoring (example with Caraïbe 66%).

1.1	MILK FAT	Milk, cream, butter	9 %	2.5 %	or 250 g
	FAT IN FLAVORING	Choice of Valrhona chocolate		+ 6.5 %	or 650 g
	TOTAL DESIRED FAT	In the dairy products and fat in the chocolate		= 9 %	or 900 g
1.2	MSNF	Milk powder + dry solids of dairy products.	9 %	9 %	or 900 g
1.3	SUGAR	Sucrose	20 %	12 %	or 1200 g
	OTHER SUGARS	Atomized glucose		6 %	or 600 g
	OTHER SUGARS	Invert sugar		2 %	or 200 g
1.4	STABILIZER	E401, E403, E406, E410, E412, E415, E440, E466	0.4 %	0.20 %	or 20 g
	EMULSIFIER	Glycerol Monostearate, E471 to E474		0.20 %	or 20 g

Reminder:
milk ice = minimum 2.5% milk fat.
Ice Cream = 5%

Space remaining for fat content of flavoring to attain 9% of Total Fat.

2. METHOD

• Use the data in the preceding table: Milk fat + Fat in chocolate = Total fat, weight of the various sugars, weight of stabilizers/emulsifiers that comply with the basic regulatory standards. Once established, these data appear in the table below.

2.1. CALCULATE THE CHOCOLATE REQUIREMENT

based on the table showing the composition of Valrhona products:

Caraïbe 66%

contains:

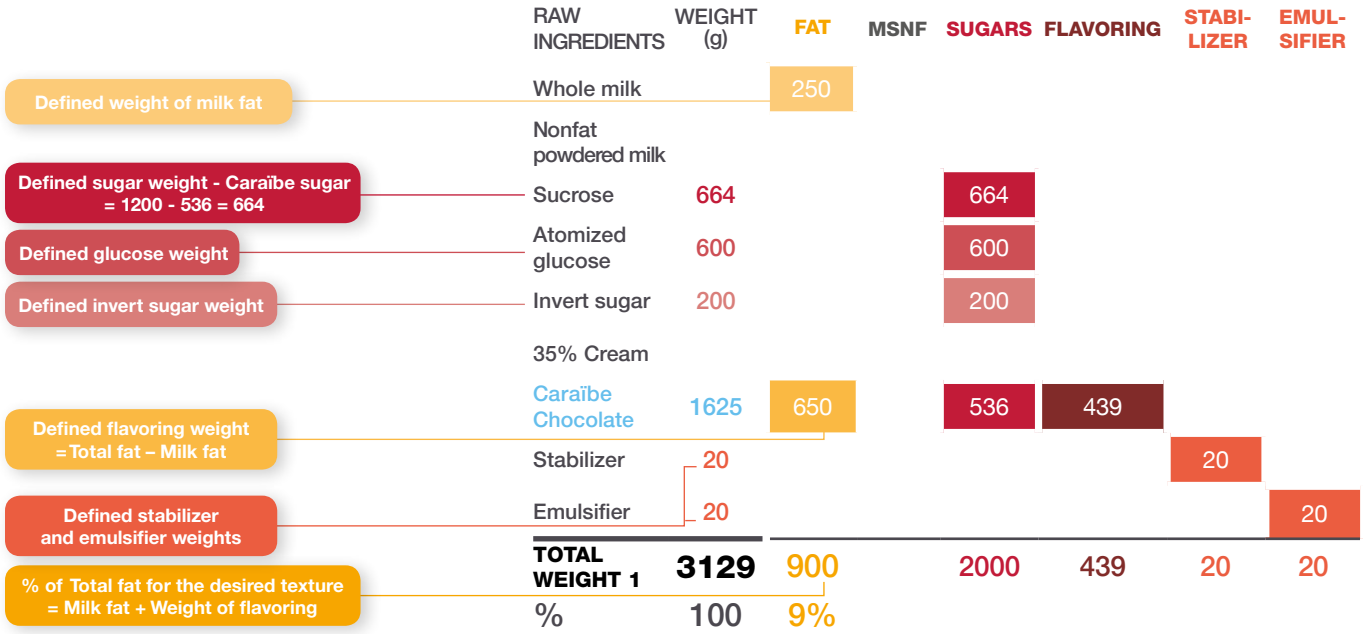
- 40% fat and 33% sugar
- THE TDE (Total Dry Extract) of Caraïbe cocoa is determined by the following calculation:
  100 – (40 + 33) = 27%

FAT	40%	Or 650 g
SUGAR	33%	Or 536 g
TDE COCOA	27%	Or 439 g
TOTAL	100%	Or 1625 g

Once the total has been determined, the rest of the table is calculated based on the % of solids out of the weight of chocolate:
(33/100) x 1625 = 536
(27/100) x 1625 = 439

Therefore, to determine the **total optimum chocolate weight**, carry out a quick calculation:

(Fat in chocolate x 100) / % Fat in chocolate
=
(650 x 100) / 40
=
1625



• Determine the weight of the milk & formulas in steps:

2.2. CALCULATE THE WEIGHT OF SERUM 1 *

●●○○○○

Weight of Serum 1 *

Total desired mass of the mixture
10 000

−

1625 weight of the flavoring/chocolate
+ 664 sugar
+ 600 glucose
+ 200 inverted sugar
+ 20 stabilizer
+ 20 emulsifier

10 000 − 3 129

=

6 871g

2.3. CALCULATE THE WEIGHT OF THE NONFAT POWDERED MILK

●●●○○○

Weight of nonfat powdered milk

(Required weight of TDE)
−
(**Weight of serum 1** x 0.088)

/

Weight of MSNF in 1kg of nonfat powdered milk – 0.088

These data are baseline constants.

(900 – (6 871 x 0.088)) /
(0.970 – 0.088)

=

334g

2.4. CALCULATE THE WEIGHT OF SERUM 2*

●●●●○○

Weight of Serum 2 *

10 000

−

(**TOTAL WEIGHT 1**
+
Weight of nonfat powdered milk)

10 000 – (**3129** + 334)

=

6 537g

2.5. FIND THE WEIGHT OF THE 35% CREAM

●●●●●○

Weight of 35% cream

(Milk fat)
– (**Weight of Serum 2**
x % Fat in milk)

/

(% fat in the cream)
– (% fat in the milk)

The % fat in the milk is a known constant: 3.6%.

If the cream is replaced with butter, the % fat is 82%.

(250 – (6537 x 0,036)) /
(0.35 – 0.036)

=

48g

2.6. FIND THE WEIGHT OF THE MILK

●●●●●●

Weight of the milk

10 000 −

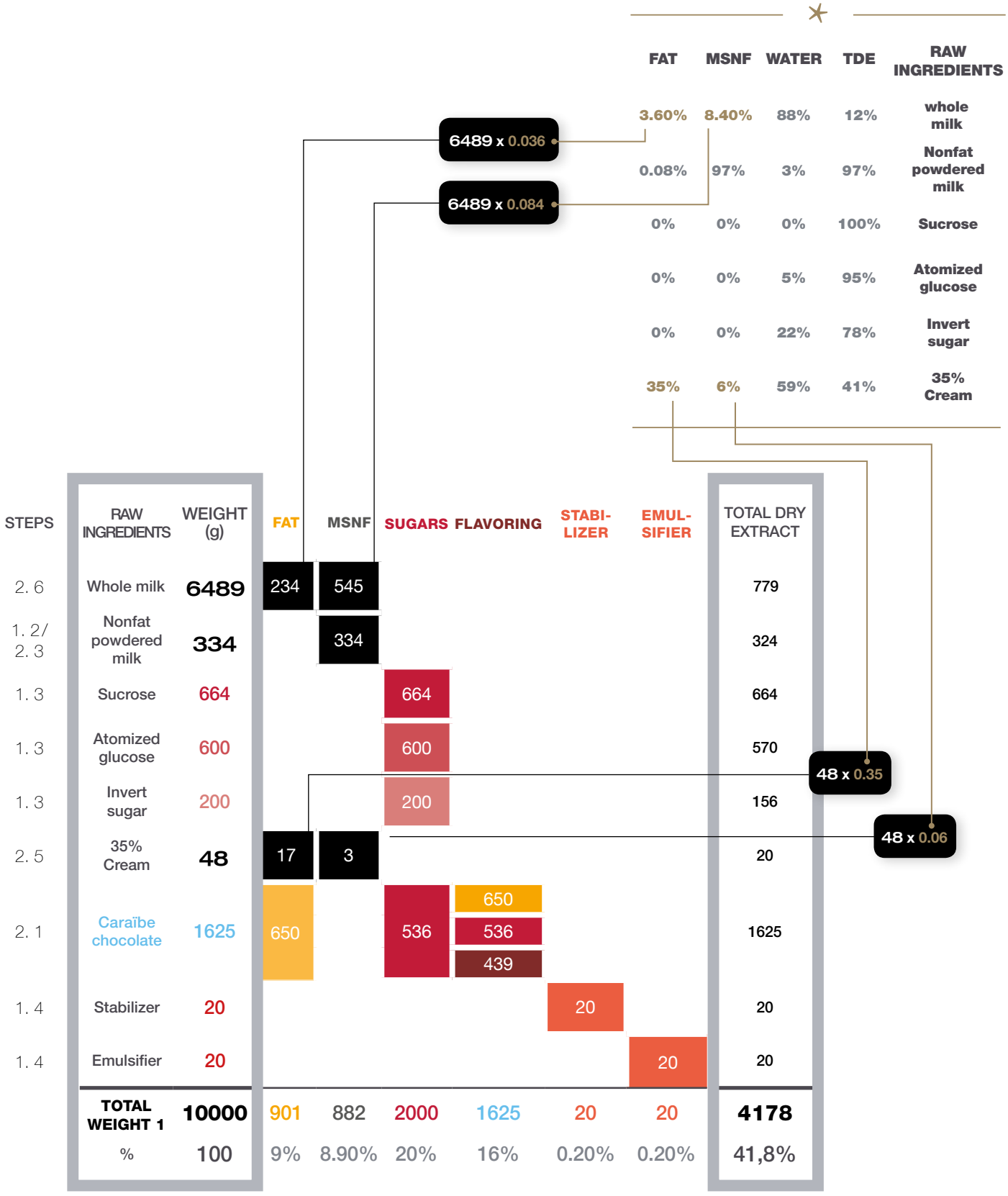
(334 weight of the nonfat powdered milk
+ 664 + 600 + 200 weights of the sugars
+ 48 weight of the cream
+ 1625 weight of the Caraïbe chocolate
+ 20 + 20 weight of the stabilizers/emulsifiers)

10 000
–
(334 + 664 + 600 + 200 + 48 + 1625 + 20 + 20) → 3511
=
6489g

* Serum 1 : Mixture of ingredients in a recipe. Whole milk + nonfat powdered milk + cream / * Serum 2 : Milk + cream

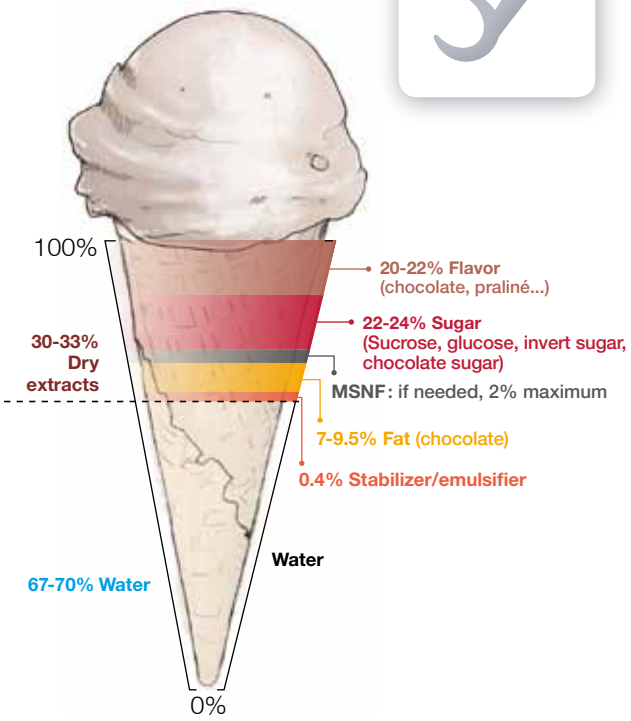
Analytical table for

Caraïbe 66% chocolate ice cream



Sorbet

Carefully weigh out all ingredients.
Follow the order given.
Pour the water into the cooking receptacle.
At 25°C (77°F), add the powdered milk.
At 30°C (86°F), add the sugars (invert sugar, atomized glucose, and superfine sugar, combined).
At 45°C (113°F), add the final ingredient, stabilizer/emulsifier, combined with a portion of the total sugar (about 10%).
Pour a small amount of the liquid (about 2/3 of the weight of the chocolate) into the melted chocolate or praliné, stirring in the center until glossy and elastic and the mixture has started to emulsify.
Continue gradually adding the liquid. Blend to perfect the emulsion
Place everything together in the saucepan and pasteurize at 85°C (185°F) for two minutes before rapidly cooling to 4°C (39°F).
Allow to rest for a minimum of 12 hours at 4°C (39°F).
Blend and churn between -6°C (21°F) and -10°C (50°F).
Store in the freezer at -18°C (-0.4°F).



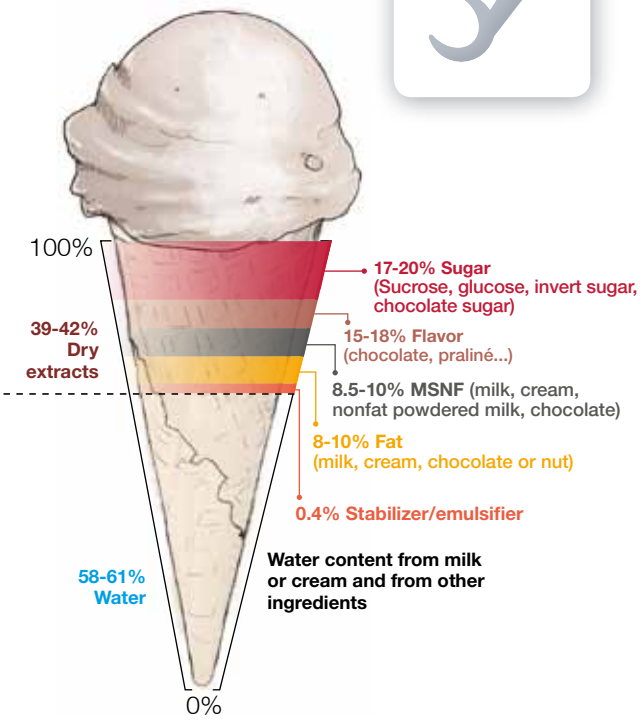
Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	EXTRA AMER	66% HAZELNUT PRALINE	50% ALMOND-HAZELNUT PRALINE
Chocolate/ Praliné or other	400	420	420	420	440	460	200	280
Water	1170	1170	1172	1174	1178	1198	1278	1280
Nonfat powdered milk	42	42	42	42	42	42	42	42
Superfine sugar	160	140	138	136	112	112	252	190
Atomized glucose	140	140	140	140	140	140	180	160
Invert sugar	80	80	80	80	80	40	40	40
Stabilizer/ emulsifier	8	8	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000	2000	2000

VALRHONA PRODUCTS	CARAMÉLIA	JIVARA	IVOIRE	OPALYS	DULCEY	GIANDUJA MILK	ALMOND PASTE 70%	COCOA NIBS	COCOA POWDER
Chocolate/ Praliné or other	440	440	440	400	420	220	440	400	160
Water	1220	1176	1180	1200	1196	1278	1150	1270	1210
Nonfat powdered milk	42	42	42	42	42	42	42	42	42
Superfine sugar	130	114	70	150	154	252	220	440	380
Atomized glucose	160	160	200	160	140	160	140	200	160
Invert sugar	-	60	60	40	40	40	-	40	40
Stabilizer/ emulsifier	8	8	8	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000	2000	2000	2000

Milk Ice

Carefully weigh out all the ingredients.
Follow the order given.
Pour the water or milk into the cooking receptacle (saucepan or pasteurizer).
At 25°C (77°F), add the powdered milk.
At 30°C (86°F), add the sugars (invert sugar, atomized glucose and superfine sugar, combined).
At 40°C (104°F), add the fats (the cream).
At 45°C (104°F), add the final ingredient, stabilizer / emulsifier, combined with a portion of the total sugar (about 10%).
Pour a small amount of the liquid (about 2/3 of the weight of the chocolate) into the melted chocolate or praliné paste, stirring in the center until glossy and elastic and the mixture has started to emulsify.
Continue gradually adding the liquid. Blend to perfect the emulsion.
Place everything together in the saucepan and pasteurize at 85°C (185°F) for two minutes before rapidly cooling to 4°C (39°F).
If possible, homogenize the mixture to break down the fatty crystals as fine as possible.
Allow to rest for a minimum of 12 hours at 4°C (39°F).
Blend and churn between -6°C (21°F) and -10°C (50°F).
Store in the freezer at -18°C (-0.4°F).



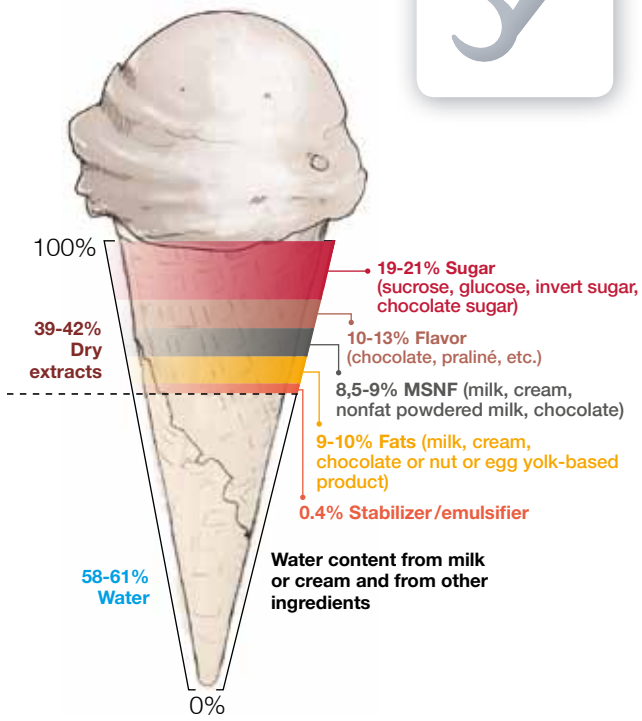
Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	EXTRA AMER	66% HAZELNUT PRALINE	50% ALMOND-HAZELNUT PRALINE
Chocolate / Praliné or other	360	300	320	310	340	360	320	440
Whole milk	1280	1286	1288	1290	1290	1330	1376	1366
Nonfat powdered milk	72	72	72	72	72	60	44	46
Superfine sugar	88	124	102	110	80	82	132	20
Atomized glucose	100	120	120	120	120	120	120	120
Invert sugar	80	80	80	80	80	40	-	-
UHT cream	12	10	10	10	10	-	-	-
Stabilizer/ emulsifier	8	8	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000	2000	2000

VALRHONA PRODUCTS	CARAMÉLIA	JIVARA	IVOIRE	OPALYS	DULCEY	GIANDUJA MILK	ALMOND PASTE 70%	COCOA POWDER
Chocolate / Praliné or other	380	360	360	320	360	300	340	160
Whole milk	1356	1346	1360	1350	1354	1350	1316	1366
Nonfat powdered milk	26	-	26	26	26	38	50	66
Superfine sugar	70	86	86	136	132	142	158	240
Atomized glucose	120	160	160	160	120	130	120	120
Invert sugar	40	40	-	-	-	-	-	40
UHT cream	-	-	-	-	-	32	8	-
Stabilizer/ emulsifier	8	8	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000	2000	2000

Dairy Ice Cream

Carefully weigh out all ingredients.
Follow the order given.
Pour the water or milk into the cooking receptacle (saucepan or pasteurizer).
At 25°C (77°F), add the powdered milk.
At 30°C (86°F), add the sugars (invert sugar, atomized glucose and superfine sugar, combined).
At 40°C (104°F), add the fats (the cream).
At 45°C (113°F), add the final ingredient, stabilizer / emulsifier, combined with a portion of the total sugar (about 10%).
Pour a small amount of the liquid (about 2/3 of the weight of the chocolate) into the melted chocolate or praliné, stirring in the center until glossy and elastic and the mixture has started to emulsify.
Continue gradually adding the liquid. Blend to perfect the emulsion.
Place everything together in the saucepan and pasteurize at 85°C (185°F) for two minutes before rapidly cooling to 4°C (39°F).
If possible, homogenize the mixture to break down the fatty crystals as fine as possible.
Allow to rest for a minimum of 12 hours at 4°C (39°F).
Blend and churn between -6°C (21°F) and -10°C (50°F).
Store in the freezer at -18°C (-0.4°F).



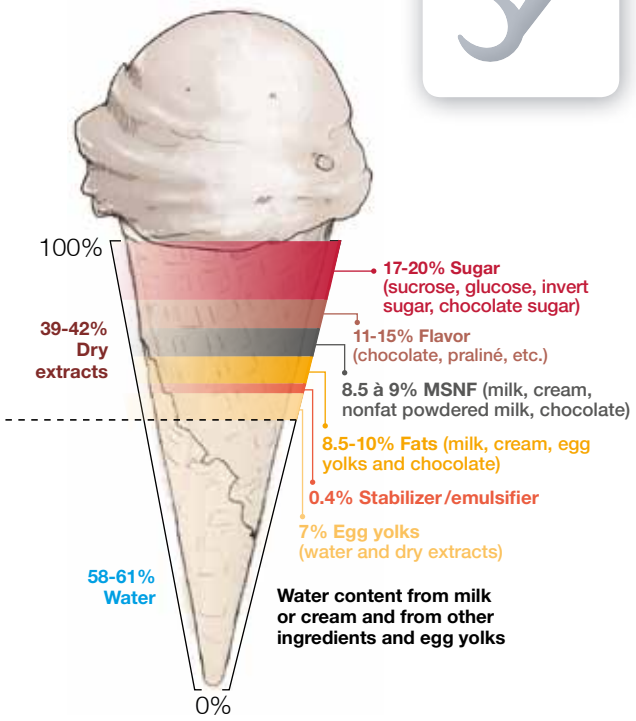
Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	EXTRA AMER	66% HAZELNUT PRALINE	50% ALMOND-HAZELNUT PRALINE
Chocolate/ Praliné or other	240	200	220	212	232	240	200	280
Whole milk	1238	1248	1198	1200	1200	1226	1282	1272
Nonfat powdered milk	92	92	66	66	66	70	64	66
Superfine sugar	172	182	186	192	172	114	152	60
Atomized glucose	120	120	120	120	120	160	140	160
Invert sugar	40	60	40	40	40	20	-	-
UHT cream	90	90	162	162	162	162	154	154
Stabilizer/ emulsifier	8	8	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000	2000	2000

VALRHONA PRODUCTS	CARAMÉLIA	JIVARA	IVOIRE	OPALYS	DULCEY	GIANDUJA MILK	ALMOND PASTE 70%	COCOA NIBS	COCOA POWDER
Chocolate/ Praliné or other	260	240	240	220	240	240	240	200	100
Whole milk	1234	1212	1254	1236	1214	1278	1204	1114	1272
Nonfat powdered milk	68	28	66	68	70	64	70	66	66
Superfine sugar	112	150	96	130	128	116	156	280	240
Atomized glucose	120	160	140	140	140	140	160	120	120
Invert sugar	40	40	40	40	40	-	-	40	40
UHT cream	158	162	156	158	160	154	162	372	154
Stabilizer/ emulsifier	8	8	8	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000	2000	2000	2000

Egg-Based Ice Cream

Carefully weigh out all ingredients.
Follow the order given.
Pour the water or milk into the cooking receptacle (saucepan or pasteurizer).
At 25°C (77°F), add the powdered milk.
At 30°C (86°F), add the sugars (invert sugar, atomized glucose and superfine sugar, combined).
At 40°C (104°F), add the fats (the cream) and egg yolks, mixed together.
At 45°C (113°F), add the final ingredient, stabilizer / emulsifier, combined with a portion of the total sugar (about 10%).
Pour a small amount of the liquid (about 2/3 of the weight of the chocolate) into the melted chocolate or praliné, stirring in the center until glossy and elastic and the mixture has started to emulsify.
Continue gradually adding the liquid. Blend to perfect the emulsion.
Place everything together in the saucepan and pasteurize at 85°C for two minutes before cooling rapidly to 4°C (39°F).
If possible, homogenize the mixture to break down the fatty crystals as fine as possible.
Allow to rest for a minimum of 12 hours at 4°C (39°F).
Blend and churn between -6°C (21°F) and -10°C (50°F).
Store in the freezer at -18°C (-0.4°F).



Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	EXTRA AMER	66% HAZELNUT PRALINE	50% ALMOND-HAZELNUT PRALINE
Chocolate/ Praliné or other	330	260	280	280	300	280	240	300
Whole milk	1230	1234	1236	1230	1234	1232	1292	1298
Nonfat powdered milk	78	76	76	76	76	76	62	64
Superfine sugar	54	106	84	90	66	108	118	50
Atomized glucose	120	120	120	120	120	140	140	140
Invert sugar	40	40	40	40	40	-	-	-
Egg yolks	140	140	140	140	140	140	140	140
UHT cream	-	16	16	16	16	16	-	-
Stabilizer/ emulsifier	8	8	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000	2000	2000

VALRHONA PRODUCTS	CARAMÉLIA	JIVARA	IVOIRE	OPALYS	DULCEY	GIANDUJA MILK	ALMOND PASTE 70%	COCOA NIBS	COCOA POWDER
Chocolate/ Praliné or other	280	240	240	230	240	250	250	200	120
Whole milk	1254	1222	1312	1292	1278	1296	1240	1130	1154
Nonfat powdered milk	66	106	64	64	66	62	68	64	62
Superfine sugar	112	100	96	126	128	112	154	240	200
Atomized glucose	120	120	140	140	140	140	140	160	120
Invert sugar	20	40	-	-	-	-	-	-	-
Egg yolks	140	140	140	140	140	140	140	200	140
UHT cream	-	24	-	-	-	-	-	198	196
Stabilizer/ emulsifier	8	8	8	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000	2000	2000	2000

Recommendations of use in *ice-cream* applications

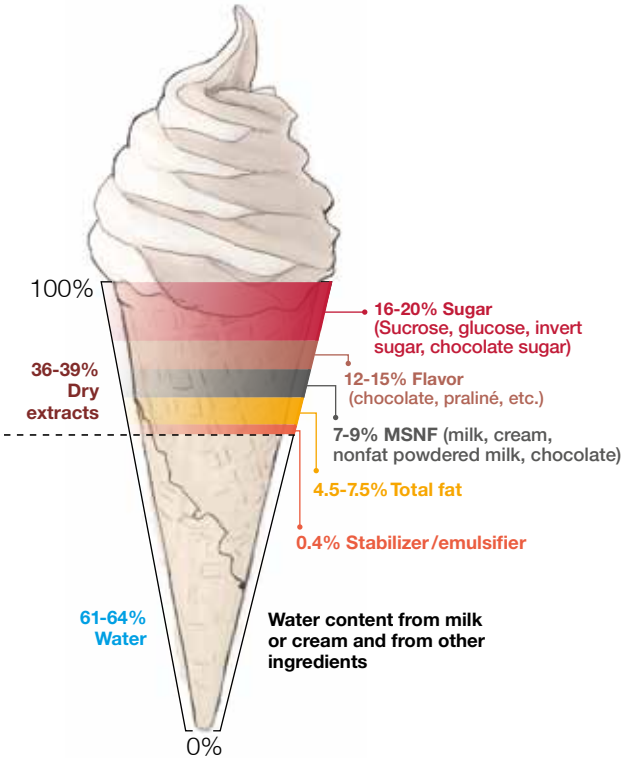
Each chocolate has its own specific characteristics: character, flavor, percentage of cacao, texture, etc.

Alain Chartier and L'École Valrhona have carried out a series of testing sessions in order to be able to recommend the most suitable products for specific applications. These tips will help you bring out the best from our products and your own creations.

The use of milk chocolate, white chocolate or Dulcey in sorbets takes the amount of powdered milk (MSNF) over regulated limits for a product to be described as a sorbet. Therefore, these recipes are referred to as "water ices".

Soft Ice Cream

Carefully weigh out all ingredients.
Follow the order given.
Pour the water or milk into the cooking receptacle (saucepan or pasteurizer).
At 25°C (77°F), add the powdered milk.
At 30°C (86°F), add the sugars (invert sugar, atomized glucose and superfine sugar, combined).
At 40°C (104°F), add the fats (the cream).
At 45°C (113°F), finish ingredients by adding the stabilizer / emulsifier combined with about 10% of the total sugar.
Pour a small amount of the liquid (about 2/3 of the weight of the chocolate) onto the melted chocolate or praliné, stirring in the center until glossy and elastic and the mixture has started to emulsify.
Continue gradually adding the liquid. Blend to perfect the emulsion.
Place everything together in the saucepan and pasteurize at 85°C (185°F) for two minutes before cooling rapidly to 4°C (39°F).
If possible, stir the mixture to break down the fatty crystals as fine as possible.
Allow to rest for a minimum of 12 hours at 4°C (39°F).
Place in the soft ice cream machine, churn as desired, and serve immediately.



Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	MACAÉ	JIVARA	IVOIRE	DULCEY	50% ALMOND-HAZELNUT PRALINE
Chocolate / Praliné	280	280	280	280	280	240
Whole milk	1359	1313	1353	1381	1345	1359
Nonfat powdered milk	67	67	67	67	60	73
Superfine sugar	127	139	132	105	127	120
Atomized glucose	120	120	120	120	147	160
Invert sugar	40	40	40	40	-	40
UHT cream	-	33	-	-	33	-
Stabilizer/ emulsifier	8	8	8	8	8	8
TOTAL	2000	2000	2000	2000	2000	2000

Fruits Ice

Carefully weigh out all the ingredients.
Add the ingredients in the order listed. Pour the water or milk into the cooking receptacle (saucepan or pasteurizer).
At 25°C (77°F), add the powdered milk.
At 30°C (86°F), add the sugars (invert sugar, atomized glucose and superfine sugar, combined).
At 40°C (104°F), add the fats (the cream).
At 45°C (113°F), finish ingredients by adding the stabilizer/emulsifier combined with about 10% of the total sugar.
Pour a small amount of the liquid (20-25%) onto the partially-melted chocolate or praliné, stirring in the center until glossy and elastic and the mixture has started to emulsify.
Continue gradually adding the liquid. Blend to perfect the emulsion.
Pasteurize at 85°C (185°F) for two minutes and then cool rapidly to 4°C (39°F).
If possible, stir the mixture to break down the fatty crystals as fine as possible.
Allow to rest for a minimum of 12 hours at 4°C (39°F).
Add the blended or pureed fruit at 4°C (39°F) and blend well. Blend and churn between -6°C (21°F) and -10°C (14°F).
Store in the freezer at -18°C (-0.4°F).

Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	MACAÉ	JIVARA	IVOIRE	DULCEY	50% ALMOND-HAZELNUT PRALINE
Chocolate / Praliné	420	420	420	420	450	660
Whole milk	1383	1363	1383	1309	1373	2056
Nonfat powdered milk	100	100	100	60	100	70
Superfine sugar	200	220	220	234	180	30
Atomized glucose	120	160	140	180	160	180
Invert sugar	80	60	60	120	60	-
Stabilizer/ emulsifier	11	11	11	11	11	4
Fruit puree at 20° Brix	Apricot 666	Raspberry 666	Blackcurrant 666	Passion fruit 666	Mango 666	Lemon zest 3
TOTAL	2980	3000	3000	3000	3000	3003

Granita

Creations from Alain Chartier and l'École Valrhona

COCOA NIB GRANITA

830 g water
170 g sugar
200 g COCOA NIBS

Heat the water and infuse the cocoa nibs for 30 minutes, covered with plastic wrap. Strain to remove the cocoa nibs.
Add the sugar. Heat to 85°C (185°F). Chill to 4°C (39°F).
Check the Brix measurement with a refractometer and ensure the syrup is at 17°B.
Pour into a shallow container and freeze at -18°C (-0.4°F).
Stir from time to time to form small ice crystals.

COCOA POWDER GRANITA

700 g water
450 g sugar
200 g COCOA POWDER
650 g whole milk

Bring the cocoa powder and milk to a boil.
Leave to rehydrate, and then strain the mixture.
Make a syrup with the water and sugar.
Add the syrup and chocolate milk. Chill to 4°C (39°F).
Check the Brix measurement with a refractometer and ensure the syrup is at 24°B.
Pour into a narrow container and freeze at -18°C (-0.4°F).
Stir from time to time to form small ice crystals.

Iced Mousse

Carefully weigh out all the ingredients. Bring the milk and glucose to a boil. Mix the egg yolks with the sugar and dextrose. Pour the hot milk-glucose mixture into the egg yolks-sugar mixture. Cook to 84°C (183°F). Gradually pour the custard onto the chocolate and blend to emulsify. Blend to perfect the emulsion. Chill the mixture and when it reaches 45°C (114°F), add the whipped cream. Pour into molds.

Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	EXTRA AMER	66% HAZELNUT PRALINE
Chocolate / Praliné or other	400	429	458	400	395	492	443
Whole milk	308	307	327	333	329	328	316
Glucose syrup	271	270	235	267	263	262	253
Egg yolks	185	184	196	160	158	197	190
Superfine sugar	271	245	183	253	250	197	228
Dextrose	74	74	78	80	79	-	63
Whipping cream 35%	492	491	523	507	526	525	506
TOTAL	2000	2000	2000	2000	2000	2000	2000

VALRHONA PRODUCTS	50% ALMOND-HAZELNUT PRALINE	CARAMÉLIA	JIVARA	OPALYS	DULCEY	GIANDUJA MILK	ALMOND PASTE 70%
Chocolate / Praliné or other	470	481	481	429	395	395	400
Whole milk	336	316	316	307	329	329	308
Glucose syrup	268	253	253	270	263	263	271
Egg yolks	201	152	152	184	158	158	185
Superfine sugar	188	241	241	245	250	250	271
Dextrose	-	76	76	74	79	79	74
Whipping cream 35%	537	481	481	491	526	526	492
TOTAL	2000	2000	2000	2000	2000	2000	2000

& Iced Parfaits

Mix the egg yolks with the sugar and water, and poach in a bain-marie at 84°C (183°F) to make a "pâte à bombe". Place in a freestanding mixer and beat until tepid. Whip the cream. Melt the chocolate couverture and emulsify with a little whipped cream. Add the remaining whipped cream and the pâte à bombe and carefully fold together. Mold and store in the freezer at -18°C (-0.4°F).

Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	EXTRA AMER	66% HAZELNUT PRALINE	50% ALMOND-HAZELNUT PRALINE
Chocolate / Praliné or other	120	125	130	130	130	135	80	80
Egg yolks	100	100	100	100	100	100	100	100
Water	25	25	25	25	25	25	25	25
Superfine sugar	75	75	75	75	75	75	75	75
Whipping cream 35%	375	375	375	375	375	375	375	375
TOTAL	695	700	705	705	705	710	655	655

VALRHONA PRODUCTS	CARAMÉLIA	JIVARA	IVOIRE	OPALYS	DULCEY	GIANDUJA MILK	ALMOND PASTE 70%	COCOA POWDER
Chocolate / Praliné or other	145	145	140	140	145	80	80	37
Egg yolks	100	100	100	100	100	100	100	100
Water	25	25	25	25	25	25	25	25
Superfine sugar	75	75	75	75	75	75	75	75
Whipping cream 35%	375	375	375	375	375	375	375	375
TOTAL	720	720	715	715	720	655	655	612

Iced Soufflés

Carefully weigh out all the ingredients.
Make a Swiss meringue with the egg whites and sugar. Heat in a bain-marie to 55-60°C (131-140°F).
Whip slowly until completely cool.
Meanwhile, melt the couverture at 55°C (131°F) if a dark-chocolate couverture or 45°C (113°F) for other couvertures.
Whip the cream until fluffy.
Add the minimum whipped cream necessary to emulsify the couverture. Carefully fold in the remaining cream.
Add the meringue to the emulsion. Mold and freeze.
Pour into molds.

Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	CARAMÉLIA	JIVARA	OPALYS	DULCEY
Chocolate / praliné	340	300	415	335	420	435	400	475	450
Egg whites	120	120	120	120	120	120	120	120	120
Superfine sugar	200	200	200	200	200	200	200	200	200
Whipping cream 35%	400	400	400	400	400	400	400	400	400
TOTAL	1060	1020	1135	1055	1140	1155	1120	1195	1170

& Iced Nougats

Carefully weigh out all the ingredients.
Cook the sugars, water, and honey to 118°C (244°F). Pour into the lightly whipped egg whites, as for an Italian meringue.
Whip and then chill the Italian honey meringue. Whip the cream until fluffy.
Heat the couvertures to a minimum of 45°C (113°F) for dark-chocolate couverture and 35°C (95°F) for the others.
Gradually add the meringue to the melted couverture and then add the texturing agents and the whipped cream. Carefully fold the ingredients together to avoid making the mixture too heavy and dense.
Mold and freeze.

Creations from Alain Chartier and l'École Valrhona

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	CARAMÉLIA
Chocolate/ praliné paste	200	220	230	230	240	260
Water	100	100	100	100	100	100
Sugar	180	180	180	180	180	180
Glucose syrup	50	50	50	50	50	50
Honey	120	120	120	120	120	120
Egg whites	240	240	240	240	240	240
UHT cream	600	600	600	600	600	600
Texture agent*	200	200	200	200	200	200
TOTAL	1690	1710	1720	1720	1730	1750

VALRHONA PRODUCTS	JIVARA	OPALYS	DULCEY	66% HAZELNUT PRALINE	50% ALMOND-HAZELNUT PRALINE
Chocolate/ praliné paste	260	230	250	280	300
Water	100	100	100	100	100
Sugar	180	180	180	180	180
Glucose syrup	50	50	50	50	50
Honey	120	120	120	120	120
Egg whites	240	240	240	240	240
UHT cream	600	600	600	600	600
Texture agent*	200	200	200	200	200
TOTAL	1750	1720	1740	1770	1790

*Candied oranges, chocolate pearls, caramel pearls, nougatine, candied fruits, etc.

Marblings

Creations from Alain Chartier and l'École Valrhona

P125 CŒUR DE GUANAJA CHOCOLATE SAUCE

150 g water 720 g ABSOLU CRISTAL NEUTRAL GLAZE 240 g P125 CŒUR DE GUANAJA	Bring the Absolu Cristal and water to a boil. Slowly pour the boiling mixture onto the melted P125 Cœur de Guanaja. Stir in the center with a rubber spatula until a glossy and elastic "core" forms. Take care to preserve this texture until mixing is complete.

DULCEY SAUCE

150 g water 720 g ABSOLU CRISTAL NEUTRAL GLAZE 240 g DULCEY 32% CHOCOLATE	Bring the water and glaze to a boil and make an emulsion with the Dulcey chocolate. Set aside in the refrigerator.

DULCEY SAUCE FOR ICED TRANSPARENCE DESERT

90 g whipping cream 35% 45 g glucose 45 g invert sugar 120 g DULCEY 32% CHOCOLATE 2 g gelatin	Bring the cream, glucose and invert sugar to a boil. Add the soaked and strained gelatin. Gradually add the cream to the chocolate and blend to create a glossy and elastic emulsion. Blend to perfect the emulsion and then set aside in the refrigerator.

TROPICAL VANILLA CARAMEL SAUCE

160 g superfine sugar 140 g glucose DE 38/40 30 g butter 84% fat 60 g whipping cream 35% 70 g passion fruit puree 25 g banana puree 25 g mango puree 40 g sweetened condensed milk 1 Tahitian vanilla bean	Make a dry caramel with the superfine sugar. Add the glucose and immediately stop the cooking with the butter, cream and warmed fruit puree. Slowly bring to a boil. Cook for two minutes and then add the sweetened condensed milk. Set aside in the refrigerator.

CARAMEL SAUCE WITH ESPELETTE PEPPER

150 g superfine sugar 150 g glucose 115 g whipping cream 35% 115 g sweetened condensed milk 1 Tahitian vanilla bean 2 g Espelette pepper	Make a dry caramel with the superfine sugar. Add the glucose and immediately stop the cooking with the warmed cream, condensed milk, vanilla and pepper. Slowly bring to a boil and then set aside in the refrigerator.

TRANSLUCENT JUS

500 g strawberry puree 115 g superfine sugar 200 g glucose DE 38/40 75 g invert sugar 35 g strawberry eau-de-vie	Take one third of the puree and add the sugar. Bring to a boil and dissolve the sugar. Add the remaining fruit puree and the strawberry eau-de-vie. Store the coulis in the freezer.

ABSOLU FRUIT JELLY

1 kg ABSOLU CRISTAL NEUTRAL GLAZE 400 g fruit puree 200 g glucose syrup	Heat everything together to 60°C (140°F). Blend and set aside in the refrigerator. Use a pastry bag to marble the freshly churned ice cream and sorbet in their containers.

TIP

You can substitute the strawberry puree for other flavors (raspberry, pineapple, etc.) and change the alcohol to suit.

Toppings & Texturing agents

TIP

Sauces and marblings can also be used as toppings.

Creations from Alain Chartier and l'École Valrhona

COCOA NIB NOUGATINE

150 g	superfine sugar
2,5 g	pectin
125 g	butter 84% fat
50 g	glucose
175 g	COCOA NIBS
10 g	water

Mix the sugar with the pectin, and then add the butter, water and glucose.
Cook over a low heat, stirring occasionally, until the mixture comes together.
Simmer for a few seconds.
Add the cocoa nibs, which have been warmed in the oven.
Bake at 190-200° (374-392°F). Let cool.

CHOCOLATE PEARL COOKIES

180 g	butter 84% fat
120 g	soft brown sugar
55 g	whole eggs
180 g	flour
5 g	baking powder
150 g	chopped walnuts
150 g	DARK CHOCOLATE PEARLS

Soften the butter and then add the sugar, processing until the mixture whitens.
Add the eggs, followed by the flour and baking powder that have been sifted together.
Add the nuts and the dark chocolate pearls.
Shape into sausage shapes (5 cm diameter) and let harden in the freezer.
When hardened, cut into slices around 1/2 cm thick, and place on a baking sheet covered with parchment paper or perforated silicone sheet.
Bake at 160°C (320°F) for about 15 minutes.
Cool on a wire rack.

CARAMÉLIA TOFFEE CARAMEL

150 g	whole milk
1	tahitian vanilla bean
200 g	superfine sugar
75 g	glucose
200 g	superfine sugar
50 g	salted butter
100 g	CARAMÉLIA 36% COUVERTURE

Bring the milk to a boil with the split and scraped vanilla bean, the glucose and part of the sugar.
Make a dry caramel with the second quantity of sugar, and stop the cooking with the salted butter and hot milk mixture.
Cook to 158°C (316°F), mix with the melted Caramélia chocolate and roll into a thin layer between two silicone sheets.

PRALINÉ SHARDS

230 g	66% HAZELNUT PRALINÉ
200 g	ÉCLAT D'OR
100 g	JIVARA 40% COUVERTURE

Melt the couverture to 45°C (113°F). Add the praliné tempered to 24°C (75°F).
Add the Éclat d'Or.
Roll out a thin layer of couverture between two acetate sheets.
Leave to cool and then break into pieces. Use a spatula to fold into the churned ice cream.

COUVERTURE SHARDS

1000 g	DARK- / MILK- / WHITE- CHOCOLATE COUVERTURE OR DULCEY CHOCOLATE COUVERTURE
200 g	ÉCLAT D'OR

Melt the couverture and then temper. Add the Éclat d'Or.
Roll out a thin layer between two acetate sheets on a baking sheet.
Leave to cool and then break into pieces. Use a spatula to fold into the churned ice cream.

NUT CRUNCH

80 g water	Heat the nuts to 120°C (248°F).
250 g sugar	Heat the water and sugar to 125°C (257°F).
500 g nuts (almonds / hazelnuts / pistachios / peanuts, etc.)	Add the nuts, coat with the syrup and then caramelize, stirring constantly, until golden in color. Stop the cooking. Add the cocoa butter in cubes to protect the nuts from humidity.
50 g COCOA BUTTER	

OTHER SUGGESTIONS (add between 5-10% of the total weight)

- Caramélia and Dark Chocolate Crunchy Pearls
- Flavored and colored meringues
- Cubes of different nut crumbles
- Macarons (mini versions, fingers, pieces, etc.)
- Brownies or toasted cakes
- Caramelized or sugar-coated cereals or grains
- Candied fruits in 20% alcohol (rum, kirsch, etc.)

Glazes

Creations from Alain Chartier and l'École Valrhona

CRUNCHY POPSICLE GLAZE

VALRHONA PRODUCTS	P125 CŒUR DE GUANAJA	GUANAJA	CARAÏBE	NYANGBO	MACAÉ	CARAMÉLIA	JIVARA	IVOIRE	OPALYS	DULCEY
Chocolate	850	1000	1000	1000	1000	1000	1000	1000	1000	1000
Grape seed oil	200	200	200	200	200	200	200	200	200	200
Roasted chopped almonds	250	250	250	250	250	250	250	250	250	250
Variation with cocoa nibs or Éclat d'Or										
TOTAL	1300	1450	1450	1450	1450	1450	1450	1450	1450	1450

Carefully weigh out all the ingredients.
Roast the chopped almonds at 160°C (320°F) for 20 minutes.
Melt the couverture to 45-50°C (113-122°F).
Add the oil and almonds or other crunchy texture items at room temperature.
The mixture should be between 30-35°C (86-95°F). Chill if necessary. Coat the frozen product and store below 0°C (32°F).

GLOSSY GLAZE FOR DESSERTS

120 g COCOA POWDER	Carefully weigh out all ingredients.
270 g GUANAJA 70% COUVERTURE	Heat the water, sugar and glucose syrup. Bring to a boil.
1000 g ABSOLU CRISTAL NEUTRAL GLAZE	Add the cocoa powder and blend. Bring to a boil once more.
	Add to the couverture and blend to create an emulsion, gradually adding the hot liquid.
240 g water	Allow to set in the refrigerator overnight or longer.
360 g sugar	Use at room temperature, the next day, if desired.
1000 g glucose syrup	

Cakes

Creations from l'École Valrhona

CHOCOLATE SPONGE FINGERS

180 g butter
720 g egg whites
15 g dry egg whites
250 g superfine sugar
400 g egg yolks
75 g COCOA POWDER
120 g all purpose flour
120 g corn starch

Melt the chocolate with the butter to about 45°C (113°F). Meanwhile, mix the sugar and dry egg whites together. Whip the egg whites with the sugar and dry-egg-white mixture, added at the beginning so as to obtain a smooth texture. Sift the dry ingredients together. Delicately incorporate the egg yolks into the whipped egg whites. Take a small part of this mixture and add it to the chocolate and melted butter (to lighten). Combine the two mixtures then add the sifted dry ingredients using a scraper or skimmer. Spread out or pipe with a pastry bag.

BAKING: Bake at 180-190°C (356-374°F) in a convection oven.

CHOCOLATE			
	SINGLE ORIGIN GRAND CRU CHOCOLATE	NYANGBO 390 g	MACAÉ 440 g
	BLENDED ORIGINS GRAND CRU CHOCOLATE	GUANAJA 390 g	CARAÏBE 410 g
	PROFESSIONAL SIGNATURE	EXTRA AMER 440 g	

FLOURLESS CHOCOLATE SPONGE CAKE

60 g butter
50 g egg yolks
250 g egg whites
85 g superfine sugar

"Melt the couverture and the butter at 50°C (122°F). Soften the almond paste by adding the yolks one at a time. Mix until smooth without beating. To finish, add the melted butter and chocolate. Meanwhile, whip the egg whites with the sugar until stiff. Using a rubber spatula, add a small amount of the egg whites to the previous mixture and then combine the rest. Spread on a baking tray.

BAKING: Bake at 180-190°C (356°F) in a convection oven.
(A sheet of 40 x 60 cm weighs 700-750 g).

CHOCOLATE			
	SINGLE ORIGIN GRAND CRU CHOCOLATE	NYANGBO 200 g	MACAÉ 225 g
	BLENDED ORIGINS GRAND CRU CHOCOLATE	GUANAJA 190 g	CARAÏBE 210 g
	PROFESSIONAL SIGNATURE	EXTRA AMER 220 g	

ALMOND PASTE	70%	100 g

LIGHT CHOCOLATE "FINANCIER" SPONGE

375 g ground almonds
300 g powdered sugar
540 g egg whites, unwhipped
150 g whipping cream 35%
20 g corn starch

Combine all ingredients together (except chocolate) in a mixer or food processor. Melt the chocolate down and stir vigorously into the mixture.

BAKING: Always bake in frames (because of the batter texture) in 180°C (356°F) oven, vent open. This sponge doesn't rise much but keeps its initial thickness after baking. Sprinkle with marinated raisins or other fruits directly over the mixture before baking.

INFO

Because of its texture, this cake can be used as a base for classic assembly of entremets, desserts or frozen bûches (yule logs).

CHOCOLATE

SINGLE ORIGIN GRAND CRU CHOCOLATE	NYANGBO	MACAÉ
	85 g	98 g
BLENDED ORIGINS GRAND CRU CHOCOLATE	GUANAJA	CARAÏBE
	85 g	90 g
PROFESSIONAL SIGNATURE	EXTRA AMER	
	100 g	

ALMOND OR HAZELNUT "DACQUOISE" CAKE

115 g all purpose flour
340 g ground almonds or hazelnuts
200 g superfine sugar
20 g dry egg whites
400 g superfine sugar
560 g egg whites

Sift the flour with the ground almonds or hazelnuts and the 400 g of sugar. Mix the dry egg whites with the 200 g of sugar and whip the fresh egg whites, adding the sugar-dry egg white mixture rapidly so as to obtain a perfectly smooth consistency. Finish by folding in the sifted dry ingredients using a spatula or scraper. Pipe out or spread on a baking tray, or put into rings with a wet base to "insulate" the sponge.

BAKING: Bake in a convection oven at 180-190°C (356-374°F), vent open.

P125 CŒUR DE GUANAJA MERINGUE

400 g egg whites
400 g superfine sugar
400 g powdered sugar
300 g P125 CŒUR DE GUANAJA CHOCOLATE

Make a French meringue by whipping the egg whites with the superfine sugar until very stiff. Then add the sifted powdered sugar and the P125 Cœur de Guanaja chocolate melted to around 45-50°C (113-122°F).
Pipe out with a pastry bag.
Sprinkle the surface with shavings of P125 Cœur de Guanaja.

BAKING: Bake at 90-95°C (194-203°F).

Passionate Popsicles

An original recipe from Alain Chartier

- IVOIRE Passion Fruit Ice Cream
- Praliné sorbet
- Crunchy chocolate glaze

IVOIRE-PASSION FRUIT ICE-CREAM

Ivoire-Passion Fruit Ice-Cream recipe > see p. 32

ALMOND-HAZELNUT PRALINÉ SORBET

Praliné Sorbet recipe > see p. 26

POPSICLE GLAZE

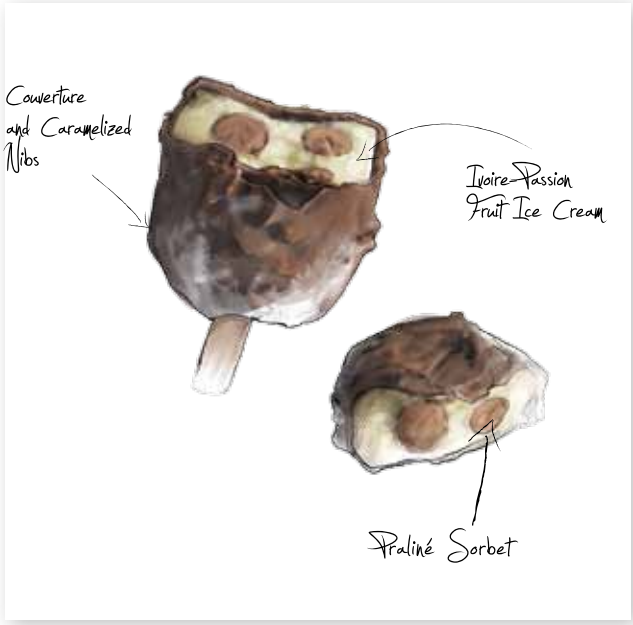
Popsicle Glaze recipe > see p. 37

With 5% sweetened crystalized nibs.

CARAMELIZED NIBS

130 g	COCOA NIBS
70 g	superfine sugar
25 g	water
10 g	COCOA BUTTER
235 g	**TOTAL**

Heat the sugar and water to 118°C (244°F), remove from the heat and then add the cocoa nibs.
Stir until the mixture sets.
Separate the pieces.
Return to the heat and caramelize.
When finished cooking, add a touch of butter and cool on a marble slab, stirring constantly to separate the cocoa nibs.



ASSEMBLY & FINISHING

Use a piping bag with a plain tip to pipe strips of Praliné Sorbet onto frozen baking sheets.
After freezing, cut into 5 cm long "sticks".
Churn the IVOIRE Passion Fruit Ice Cream.
Fill the popsicle molds and insert the sorbet sticks.
Seal the molds and freeze (-24°C/-11°F) .
Unmold and coat the popsicles with the Popsicle Glaze and add Caramelized Nibs between 30 and 35°C (86 and 95°F).

Chocolate Entremets

An original recipe from Alain Chartier

- P125 CŒUR DE GUANAJA Milk Ice
- Iced CARAMÉLIA mousse
- Liquid caramel
- CARAÏBE sorbet truffles
- Chocolate financier
- Chocolate glaze

P125 CŒUR DE GUANAJA MILK ICE

P125 Cœur de Guanaja Milk Ice recipe > see p. 27

700 g for a dessert to serve six.

ICED CARAMÉLIA MOUSSE

Iced Caramélia Mousse recipe > see p. 33

195 g for a dessert to serve six.

LIQUID CARAMEL

125 g	sugar
50 g	glucose syrup
150 g	whipped cream
145 g	lightly-salted butter
470 g	TOTAL

Heat the glucose and gradually add the sugar.
Make a dry caramel with the sugar.
Stop the cooking with the frothy whipped cream.
Add the butter and emulsify the mixture.
Set aside at +4°C (39°F).

60 g for a dessert to serve six

CARAÏBE SORBET TRUFFLES

Caraïbe Sorbet recipe > see p. 26

195 g for a dessert to serve six

+ Caraïbe Popsicle Glaze recipe > see p. 37

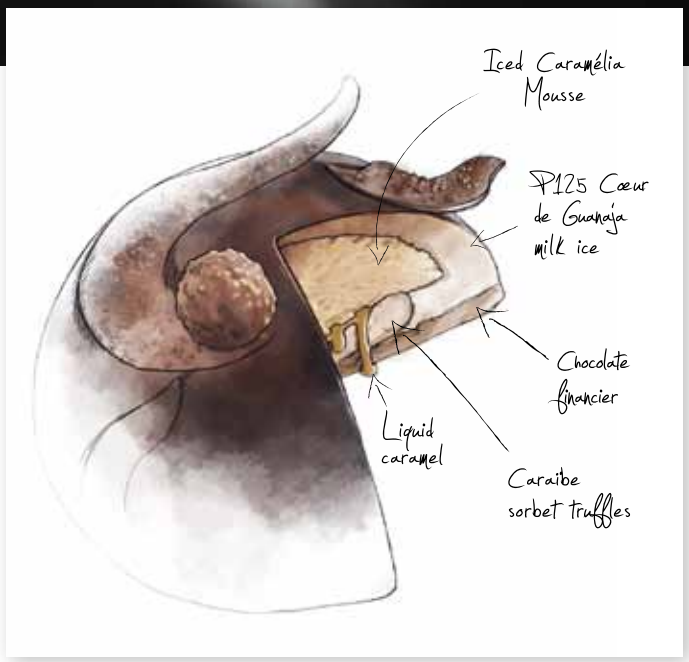
CHOCOLATE FINANCIER

Chocolate Financier recipe > see p. 39

170 g for a dessert to serve six

CHOCOLATE GLAZE

Glossy Chocolate Glaze recipe > see p. 37



ASSEMBLY & FINISHING

Make the P125 Cœur de Guanaja Milk Ice and set aside for a minimum of 12 hours.
Make the Caraïbe Sorbet and set aside for a minimum of 6 hours.
Churn and use a N°14 tip to pipe a ring of sorbet on a frozen baking sheet, with an inside diameter less than the size of the iced mousse insert (10 cm).
Dip the frozen sorbet ring in the Popsicle-Style Glaze to create a thin and crispy coating.
Prepare the Chocolate Financier and bake in circles.
Make the Liquid Caramel.
Prepare the Iced Caramélia Mousse and mold in half-spheres, 14 cm in diameter.
Insert the Caraïbe Sorbet ring into the Iced Caramélia Mousse.

Pour the Liquid Caramel onto the Caraïbe Sorbet crown, seal the Caramélia Mousse and freeze the insert.
Churn the P125 Cœur de Guanaja Milk Ice, line a 16 cm dome mold and insert the Caramélia Mousse insert.
Seal with the P125 Cœur de Guanaja Milk Ice and add the Chocolate Financier.
Set aside at -18°C (-4°F).
Unmold and glaze with the Chocolate Glaze.
Decorate with chocolate arabesques and a truffle.

Voluptuous Verrine

An original recipe from Alain Chartier

- Sugar-free cocoa crumble
- DULCEY Milk Ice
- Iced OPALYS mousse with CARAMÉLIA pearls
- Absolu ginger truffle
- Chocolate jelly

DULCEY MILK ICE

Dulcey Milk Ice recipe > see p. 27

40 g per verrine

ICED OPALYS MOUSSE with Caramélia Pearls

Iced Opalys Mousse recipe > see p. 33
+ 8% Caramélia Pearls

40 g Iced Opalys Mousse

COCOA SUGAR-FREE CRUMBLE

80 g	flour
20 g	COCOA POWDER
100 g	butter
100 g	maltitol
100 g	ground almonds
400 g	TOTAL

Dice the butter and freeze.
Sprinkle with the flour and cocoa powder.
Add the maltitol and ground almonds.
Set aside in the refrigerator.
Press through a sieve or grill to make crumbs.
Bake at 180°C (356°F).

10 g per verrine

ABSOLU GINGER VODKA GEL

500 g	ABSOLU CRISTAL NEUTRAL GLAZE
200 g	vodka
50 g	ginger paste
750 g	TOTAL

Blend all the ingredients cold.
Pipe into hollow shells.

5 g per truffle

CHOCOLATE JELLY

745 g	water
45 g	sugar
120 g	P125 CŒUR DE GUANAJA
18 g	agar-agar
14 g	gelatin
942 g	TOTAL

Mix the sugar with the agar-agar. Heat the water and add the sugar mixture. Bring to a boil and add the softened gelatin. Pour onto a silicone sheet with raised edges and mark out a curved motif. Place on the side of the glass, taking care to avoid trapping any air.

For a 60 x 40 cm sheet

GLOSSY CHOCOLATE GLAZE

Glossy Chocolate Glaze mixture > see p. 37

10 g per verrine

ASSEMBLY & FINISHING

Place the Dulcey Milk Ice in the bottom of the verrines.
Place the Crumble on top of the Dulcey Milk Ice. Add the Opalys Mousse, holding the verrine slightly at an angle. After freezing, cover the surface of the Opalys Mousse with the Chocolate Glaze.
Arrange the Ginger Truffle on top with a chocolate shard.

Belle Hélène Macarons

An original recipe from Alain Chartier

- Chocolate macarons
- MACAÉ Dairy Ice Cream
- Absolu Poire Williams gel

CHOCOLATE MACARONS

250 g	ground almonds
300 g	powdered sugar
50 g	cocoa powder
110 g	egg whites
300 g	superfine sugar
100 g	water
110 g	egg whites
40 g	superfine sugar
AN	chocolate-brown food coloring
1260 g	**TOTAL**

Sift together the ground almonds, powdered sugar and cocoa powder.
Heat the 300 g sugar with the water to 118°C (244°F) and pour into the egg whites, beaten until stiff with the superfine sugar.
Whip until nearly completely cooled and add the coloring.
Pour the unwhipped egg whites into the sifted dry ingredients, then add the whipped whites and fold together.
Pipe onto a Silpat sheet or onto baking parchment.
Leave the macarons to crust over slightly for about 15 minutes, and then bake in a convection oven for 10-11 minutes.

Makes about 50-60 macarons

MACAÉ DAIRY ICE CREAM

Macaé Dairy Ice Cream recipe > see p. 28

15 g ice cream per macaron

ABSOLU POIRE WILLIAMS JELLY

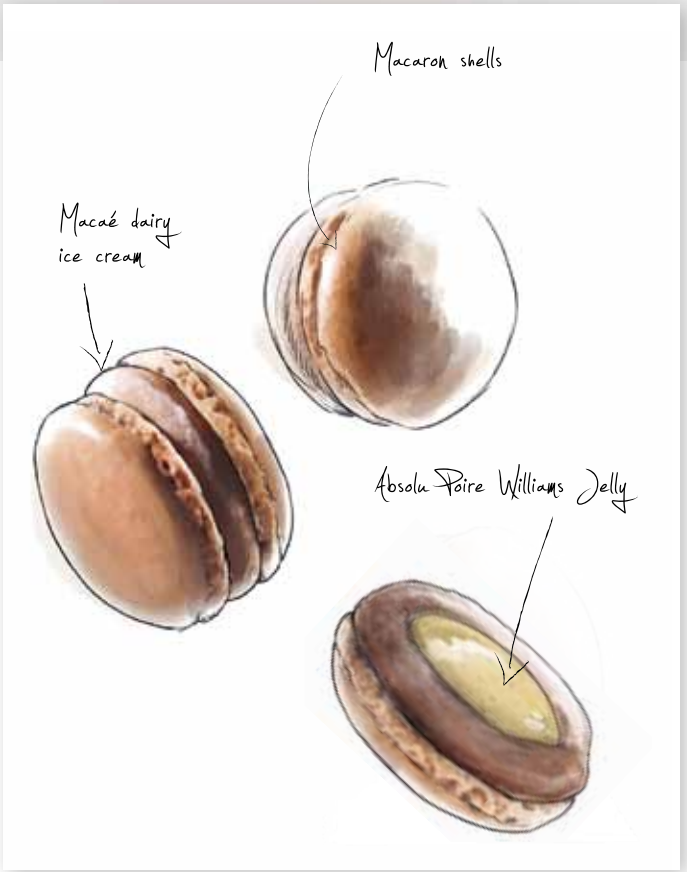
500 g	ABSOLU CRISTAL NEUTRAL GLAZE
250 g	Poire Williams liqueur
750 g	**TOTAL**

Blend the cold ingredients together.

5 g per macaron

ASSEMBLY & FINISHING

Fill the macaron shells with Macaé Dairy Ice Cream using a piping bag fitted with a plain nozzle.
Pipe a little Absolu Poire Williams Gel in the center of the ice cream.
Add a second macaron shell.
Store in the freezer at -18°C (-0.4°F).



Tangy Lime log

An original recipe from Alain Chartier

- Chocolate cake
- Praliné and caramelized hazelnut mousse millefeuille
- Praliné 66% Milk Ice
- JIVARA lime sorbet profiteroles with chocolate choux pastry
- JIVARA chocolate velvet and chocolate decoration

NUTTY PRALINÉ MILK ICE

Praliné Milk Ice recipe > see p. 27

600 g for a Flat-Bottomed Bûche mold (ref. 2183)

ICED NUTTY PRALINÉ MOUSSE

Iced Praliné Mousse recipe > see p. 33

800 g for a 60 x 40 cm cake

CARAMELIZED HAZELNUTS

500 g	Chopped hazelnuts
400 g	superfine sugar
120 g	water
16 g	COCOA BUTTER
1036 g	TOTAL

Heat the water and sugar to 120°C (248°F). Roast the nuts at 160°C (320°F) and add to the syrup. Coat the hazelnuts and caramelize. Add the cocoa butter at the end to keep the hazelnuts from sticking together.

300 g caramelized hazelnuts

JIVARA LIME SORBET

Jivara Sorbet recipe > see p. 26

Add the zest of three limes per liter of mixture.

Add the lime zest to the mixture. Churn and allow to rest. Strain before churning.

CHOCOLATE CHOUX PASTRY

250 g	water
250 g	whole milk
200 g	butter
10 g	salt
10 g	superfine sugar
500 g	eggs
80 g	P125 CŒUR DE GUANAJA
300 g	flour
1600 g	TOTAL

In the saucepan, bring the water, milk, sugar, butter and P125 Cœur de Guanaja to a boil. Sift the flour and add to the liquid. Dry out over a high heat. Away from the heat, gradually beat in the eggs. Pipe into balls around 2.5 cm in diameter. Preheat the oven to 250°C (482°F). Place the choux balls in the oven. As soon as the choux balls have puffed up, turn the oven off. Turn the oven back on when it reaches 180°C (356°F). Finish baking by drying out the choux balls. Leave the vent open.

P125 CŒUR DE GUANAJA "CRAQUELIN" CRISP

290 g	butter
360 g	raw cane sugar
300 g	flour
60 g	ground almonds
60 g	P125 CŒUR DE GUANAJA
1070 g	TOTAL

Blend the ingredients together. Roll out between two plastic sheets to a thickness of 3 mm. Set aside in the refrigerator. Cut out to the same size as the choux and add the "Craquelin" crisp before cooking.

JIVARA CHOCOLATE VELVET

600 g	JIVARA 40%
400 g	COCOA BUTTER
1000 g	TOTAL

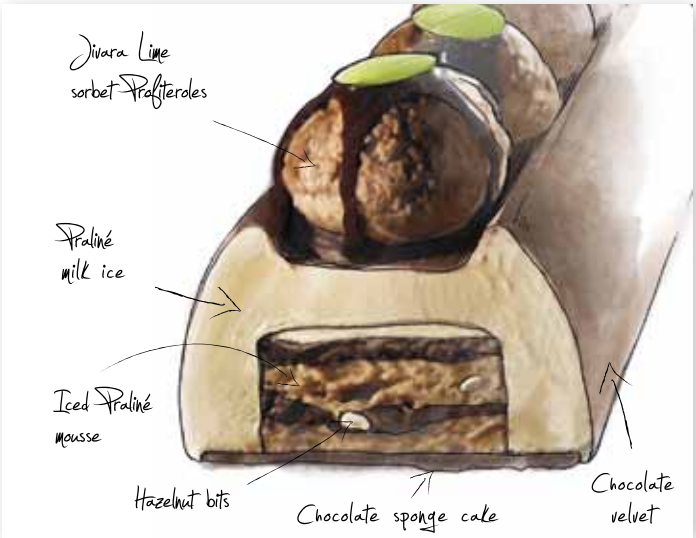
For a velvety sprayed effect, use a hot mixture (40-45°C/104-113°F) and spray onto a frozen item.

CHOCOLATE SPONGE CAKE

Flourless Chocolate Sponge Cake recipe > see p. 38

ASSEMBLY & FINISHING

Pour the Praliné Mousse onto the Chocolate Sponge Cake and sprinkle with chopped Caramelized Hazelnuts. Blast freeze.
After thawing, cut the cake into eight strips 4.5 cm wide.
Place one strip on top of another like a millefeuille. Set aside in the freezer.
Place in a Flat-Bottomed Bûche mold lined (ref. 2183) with Praliné Milk Ice. Pierce holes in the bottom of the choux balls and fill with Jivara Lime Sorbet.
Unmold the logs and spray with the Jivara Chocolate Velvet.
Arrange the sorbet-filled choux balls on the log, according to the number of servings, and decorate each one with a disc of green colored couverture.



1. Promote your know-how

It is essential to know how to communicate your passion for your profession to your customers, highlighting the various qualities of your work. Take advantage of Valrhona's vast expertise to develop your customer sales pitch and remember to use essential keywords for promoting your products.

1.1 TALK ABOUT **YOUR EXPERTISE**

COMPOSITION OF INTENSE TASTES

High-quality, "noble" ingredients
Authentic, balanced flavors
Intense flavors
Original flavor combinations

A BLEND OF TEXTURES

Surprising textures
Originality
Pleasure and indulgence

TRADITIONAL KNOW-HOW

Traditional techniques
Experience and expertise
Balance of flavors and textures

GENUINE PASSION FOR YOUR PROFESSION

Tradition and authenticity
Creativity
Quality
Closeness and friendliness

HIGH-QUALITY, GOURMET PRODUCTS

1.2 HIGHLIGHT **YOUR DIFFERENCES**

QUALITY INGREDIENTS

Promote the quality of the chocolate, fruit, dried fruit and nut products you use.

TASTE AND TEXTURE COMBINATIONS

Fire the imagination of your customers by highlighting different combinations of flavors and textures.

TRADITIONAL KNOW-HOW

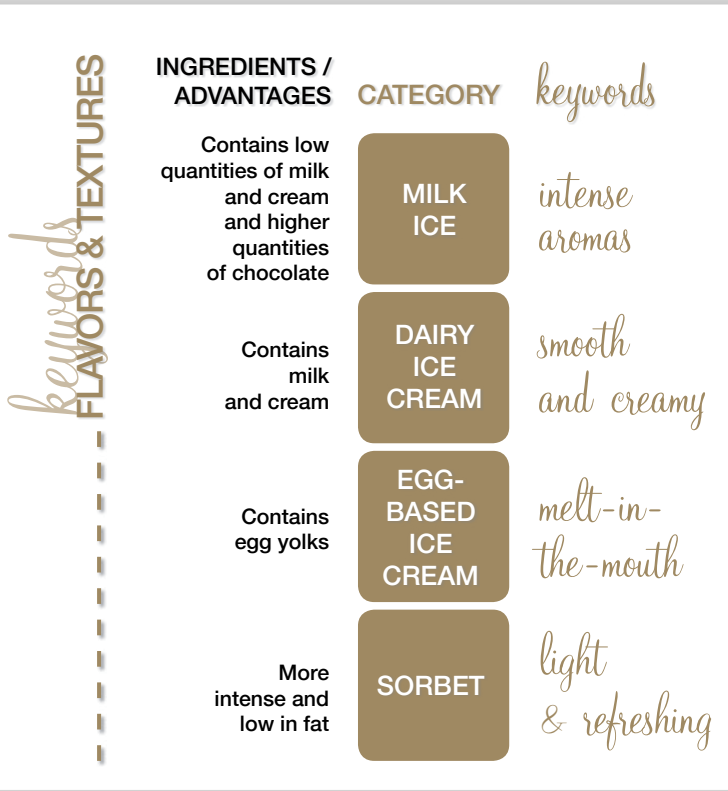
Describe your ice-cream making expertise, the different steps involved in the production of your ice cream, etc.

PROXIMITY TO CUSTOMERS

Pay particular attention to the way you welcome your customers: Friendliness and genuine advice are two major assets!

Consumers are looking for quality products that are authentic, natural, homemade and original. Your shop offers products with real added value: **SHOWCASE THESE STRENGTHS !**
Discuss them with your sales team and **DEVELOP YOUR OWN UNIQUE SELLING POINTS.** This is vital for standing out from the competition and building customer loyalty.

2. Showcase and talk about your products



2.1 PROMOTE YOUR PRODUCTS USING **SIMPLE BUT "DELICIOUS" GOURMET WORDS**

There are several kinds of ice cream and frozen desserts, representing just as many different recipes and creations from artisanal ice-cream makers.

All have various **textures** and **flavors** and it's important to introduce these to your customers. You must therefore take care **to create a simple but delectable way to present** and sell your varieties of ice cream to customers.

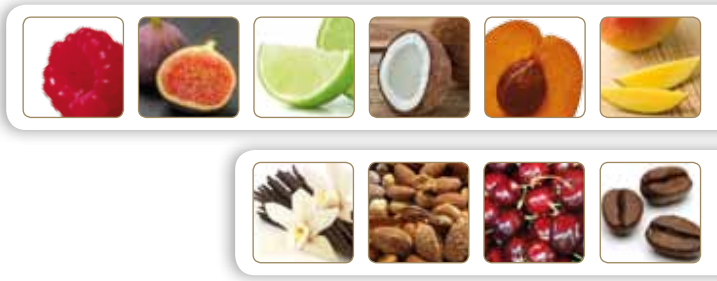
Valrhona can come to your aide by providing you with a summary of the features of various recipes and keyword suggestions to help you better describe your products.

2.2 DESCRIBE **YOUR PRODUCT PRESENTATION**

Examples of product descriptions...

3. Presentation & promotion

3.1 SHOWCASE
YOUR PRODUCT RANGE



Supercharge your product offer to attract new customers and make them want to come back for more.

- **Feel free to invite your customers to SAMPLE VARIOUS FLAVORS when they have trouble making up their minds, highlighting the selling points & describing your product while they enjoy the free tasting.**
- **Think outside the box and present your gourmet products in an original and unexpected way.**

Your **MENU/PRODUCT LIST** is an important element that must not be overlooked.

Customers use it to help make their choice and descriptions must therefore be tempting and appetizing.

The menu/product list must be **clear** and **comprehensive** but also original and **surprising**. Rather than an exhaustive list of flavors, sort your ice creams by ingredients (e.g., chocolate ice creams, ice creams with nuts, fruit-flavored ice creams, etc.).

3.2 LIVEN UP YOUR SHOP TO BOOST SALES:
HOST EVENTS & OPEN HOUSES

- **Attract business to your shop by holding events, such as theme weeks or months.** Create an event and make every day a truly exceptional and magical experience for your customers. For example, take your customers on a voyage of discovery with "Chocolate Month" or "Brazil Week". Valrhona products will bring a wonderfully indulgent and delicious touch to your event.

EXAMPLE OF A THEMED WINDOW DISPLAY

Check out our new website for culinary professionals:

www.valrhonapro.com

Create an account online and peruse Valrhona expertise through the tabs at your fingertips:

VALRHONA & YOU:
this area is reserved for our customers with access to exclusive content

NEWS & HOT TOPICS:
follow Valrhona events and find out what's new

PRODUCTS:
see all of our products, their features, and their applications

RECIPES:
consult and download recipes developed by the pastry chefs from l'École Valrhona

TRAINING COURSES:
get information on the professional training courses offered by l'École Valrhona and request registration online

VALRHONA

AUX SOURCES DU GRAND CHOCOLAT®

VALRHONA - 26600 Tain l'Hermitage - FRANCE
www.valrhonapro.com