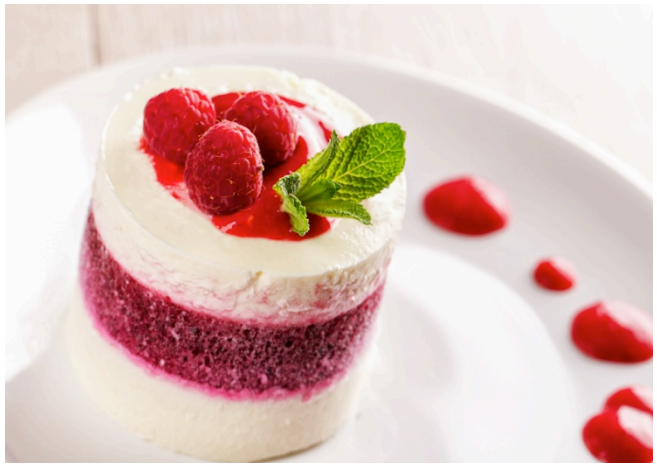
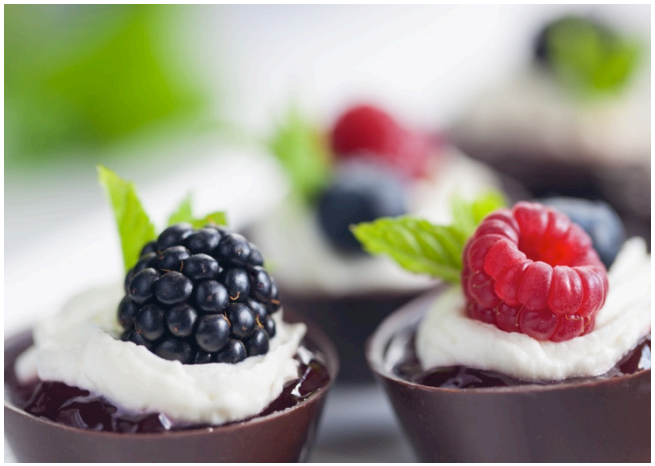
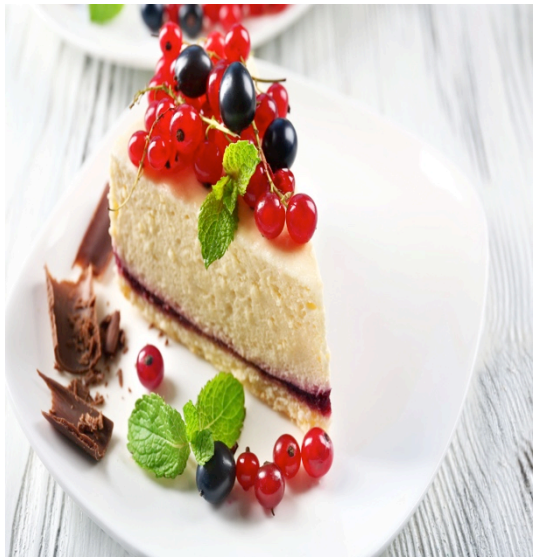
ABALONE GELATIN

Transforming Life







Gelatin – A real pal

GELATIN – A UNIQUE INGREDIENT FOR DAIRY PRODUCTS

Gelatin is a multi-talented ingredient. Its stabilizing, texturizing and binding functionalities are complemented by numerous characteristics that make it irreplaceable in the dairy products.

Powerful functionalities and properties of Gelatin helps to create innovative and healthy foods while maintaining their taste, texture and shelf stability. Gelatin also plays an important role in the preparation of low fat dairy products. Due to its ability to build oil in water emulsions it can partially replace the high fat content in many products. The development of many of the low-fat products, such as half-fat margarine, fat-reduced cheese and yoghurt varieties, which can be found on the shelves labelled light products, would not be possible without gelatin.

A natural protein

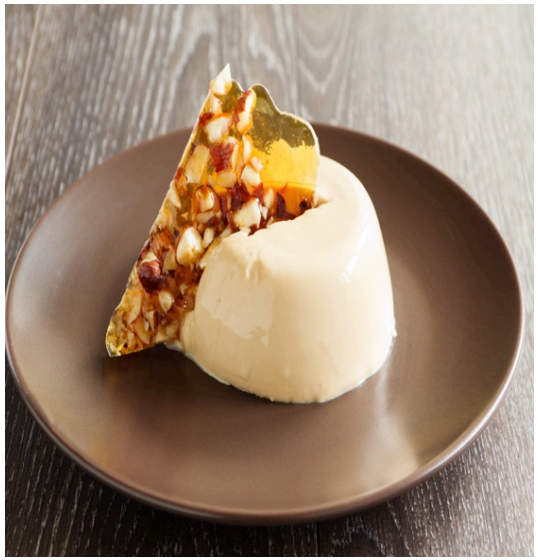
Gelatin is obtained through partial hydrolysis of collagen contained in animal skins and bones. It is a natural protein food typically consisting of 85% protein, 13% water and 2% minerals with a calorific value of 370 kcal per 100g.

Nutritional Value

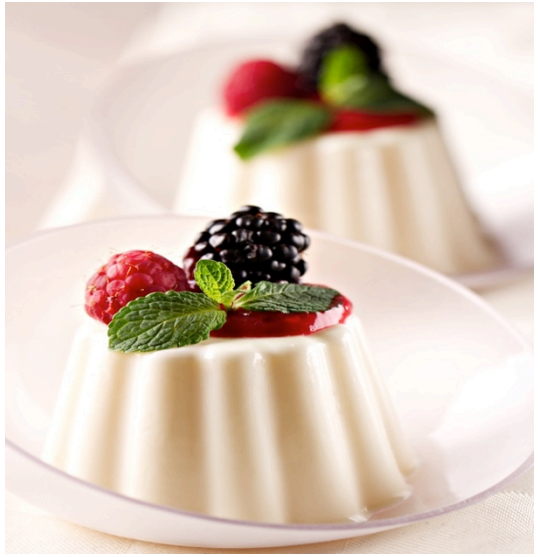
Gelatin is a fully digestible protein with a calorific value of 4 kcal/g. It contains 18 different amino-acids, including 8 of the 9 essential amino-acids that are essential to our body. Only tryptophan is missing. It is particularly rich in glycine, proline and hydroxyproline, which, together, represent almost 50% of the composition of the molecule

Clean label ingredient

Gelatin is a food ingredient and not a food additive with an E-Number. Today's consumers are more and more conscious about the components used in their daily products. The request for so-called "clean labelling" is growing. Gelatin as a natural foodstuff meets this demand perfectly.



Unique Ingredient
Unique Functionalities



GELATIN - A UNIQUE INGREDIENT WITH UNMATCHED FUNCTIONALITIES

Water-Binding

Gelatin is the choice ingredient in low-fat or reduced-fat foods, where part of the fat is replaced by water. Gelatin swells, binding 5-10 times its weight of water. It helps to obviate exudation in milk products where syneresis problems can occur.

Stabilization

Water addition in the product is critical towards the stability of emulsions and mousses. Gelatin, even at low dosages, gives stability to the system. It can strengthen a creamy structure or give a firm gellified structure to liquids. Its low setting temperature gives creaminess.

Texturizing

Gelatin characteristics are chosen to mimic the texture of fat in dairy based products (creaminess).

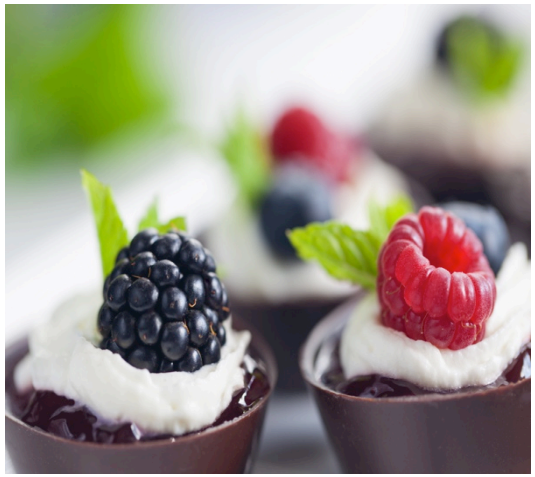
Melting at body temperature

Melting point of gelatin is close to body temperature, yielding a mouth feel far superior to that of other fat substitutes and maintaining the pleasure of eating healthy foods.

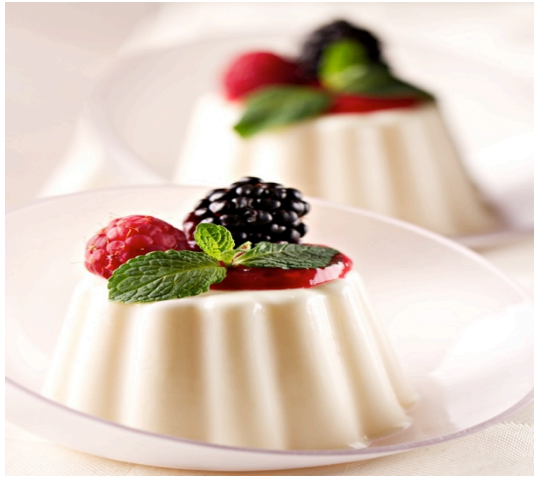
Foaming

Gelatin, as a protein, has good foaming capacity in the presence of sugar and milk. In the case of butyric or other type of fat, however, the foaming capability may be altered and it will be necessary to employ appropriate physical methods to achieve a suitable volume increase in an aerated product. Otherwise Gelatin will always stabilize and give strength to the aerated structure obtained.

.



Let Gelatin melt – then simply enjoy



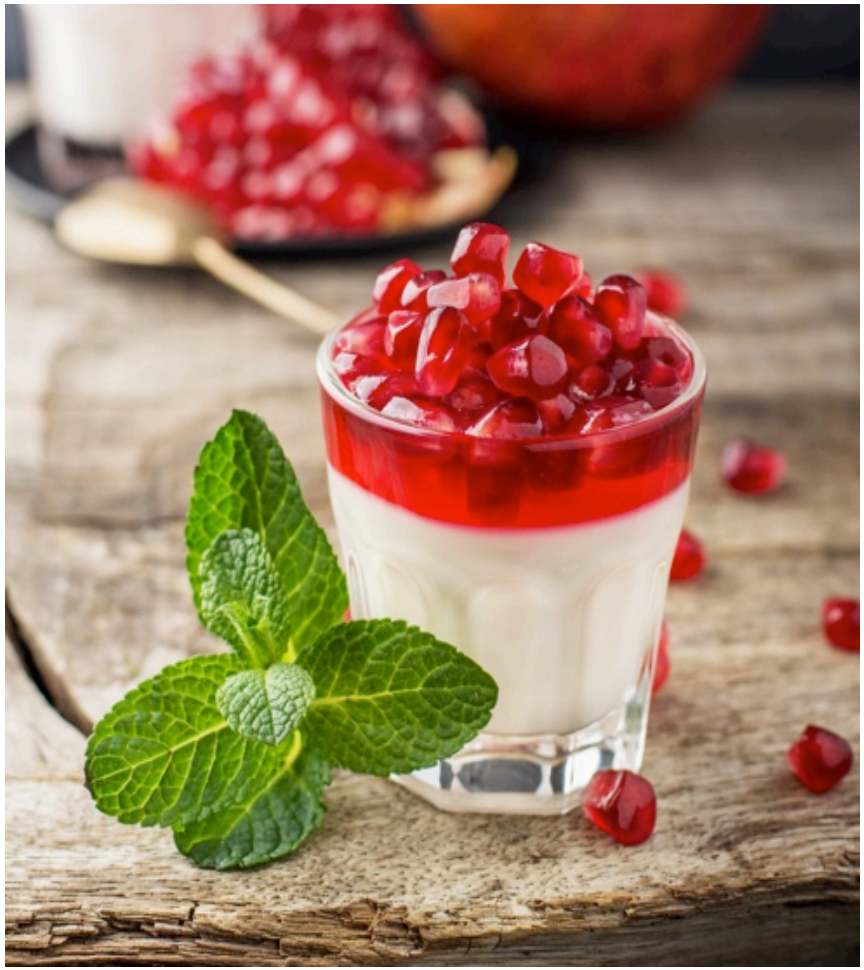
LOW FAT DAIRY PRODUCTS WITHOUT GELATIN? THIS IS HARD TO IMAGINE.

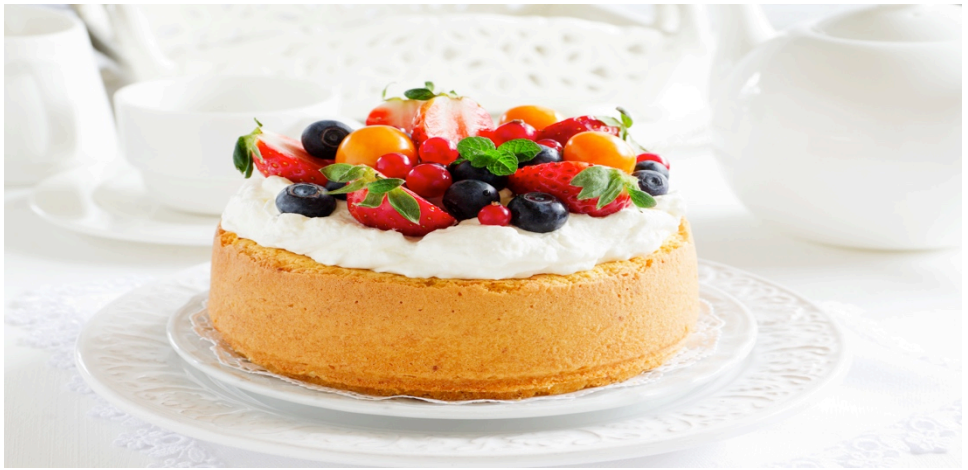
The milk industry is evolving and new, ever more elaborate products appear daily. Fruit yogurts, long-life yogurts, aerated curdled milk and low-calorie butter have taken an important place among the more traditional products such as butter, cheese and milk.
In order to respond to the demands of the market, the industry calls more and more on new technology. To thicken, stabilize or aerate, milk products are combined with other food products or additives.

Gelatin can play an important role in the preparation of low or reduced fat foods. Due to its ability to build oil in water emulsions it can partially replace the high fat content in many products. The development of many of the low-fat products, such as half-fat margarine, fat-reduced cheese and yoghurt varieties, which can be found on the shelves labelled light products, would not be possible without Gelatin.

Gelatin here works as a volume expander. It binds a certain amount of water in the final product thereby increasing the volume without adding further calories. Although the fat content of such products is decisively reduced, the fat-mimicking properties of Gelatin provide the products with a fat-like taste and mouth feel. Delicious low calorie dishes can also be prepared at home with Gelatin. They are low in fat, but still have the full flavour.

GELATIN IN DAIRY APPLICATIONS

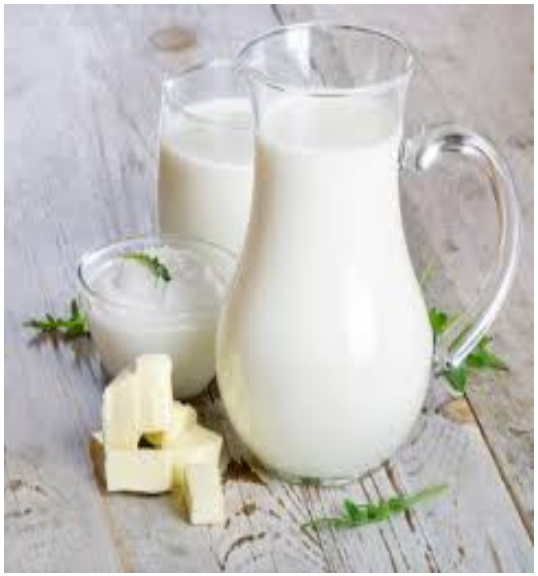




Quark

A multitude of products based on curdled milk are available on the market. They are aerated or non-aerated, and contain flavors, glaced fruits, fruit jellies, etc.

Gelatin plays the indispensable role of binder, influences texture and prevents syneresis. The Gelatin level varies between 0.1 and 2.0%. It can be directly added to the quark in the form of a solution at 40°C or as a powder after concentration.

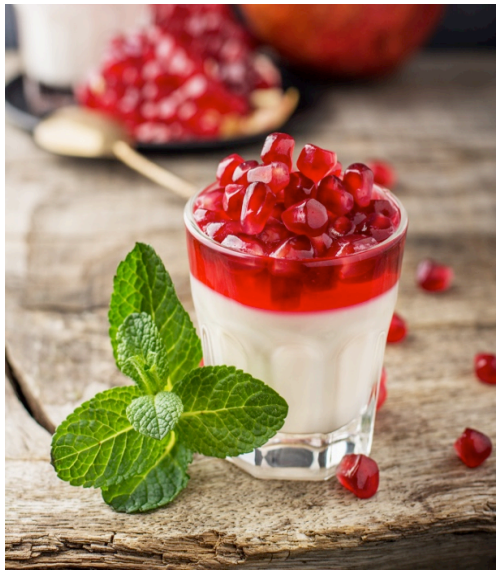


Thermally-treated fermented milks

In certain countries, the tendency is to extend the shelf-life of certain types of yogurt and fermented milk by additional pasteurization after the incubation process. This operation prevents prolonged action by the fermenting agents, but does destabilize the product texture, leading to exudation. The addition of a mixture of Gelatin and starch before pasteurization produces a good texture and obviates any exudation effect. The texture of a product stabilized with Gelatin alone is sensitive to changes in storage temperature. A combination with modified starch (0.4 – 0.6%) gives a highly satisfactory formulation in which the starch stabilizes the viscosity and the Gelatin obviates the risk of exudation.

Flavored gelled milk desserts

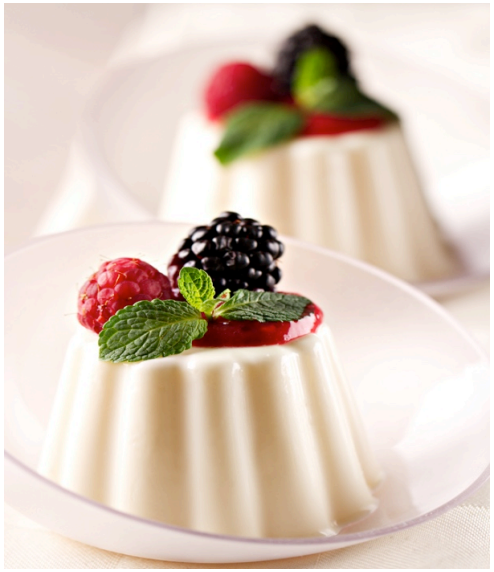
These dessert products have a semi-solid consistency and are prepared from flavored, sweetened milk. The stabilizing agent used must solubilize during thermal treatment of the milk, produce no increase in viscosity at high temperature, and gel when the product is cooled in the pot. Gelatin can be used alone or in combination with other gelling agents, such as carrageenan. It gives a soft, more elastic gel texture, for example when 1-2 g carrageenan is substituted with 2-3 g Gelatin. Gelatin levels of 2-10 g yield light aerated products. In every case a soft, non-granular gel is obtained which has improved anti-syneresis properties.



Full fat yogurt

Yogurt is produced by inoculating milk with two typical bacilli: Lactobacillus bulgaricus and Streptococcus thermophilus. Symbiotic action of these two bacilli produces lactic acid and flavors the yogurt. There is no universal “ready to use formula” for the preparation of yogurt. Each producer must establish the most favorable conditions for his equipment and bacterial cultures to achieve the nal desired product in terms of acidity, avor and viscosity.

Gelatin improves the texture of the final product without modifying the taste profile. Thanks to its ability to fix water, Gelatin has an anti-syneretic effect.

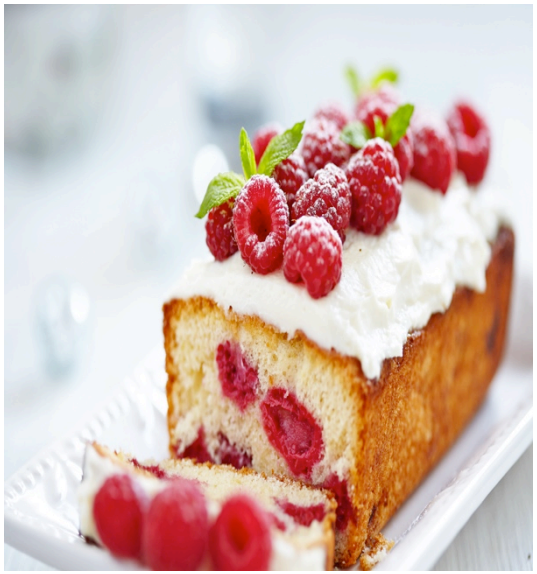


Low fat yogurt

Gelatin concentration plays an important role in the viscosity of the yogurt. High bloom concentrations (0.2 - 0.3%) give more firmness while lower bloom (0.4 - 0.6%) generates products with a softer texture and less syneresis.

Fruit yogurts

Gelatin is particularly useful in the production of fruit yogurts where some syneresis is practically inevitable without the addition of stabilizers. Gelatin can be incorporated in the yogurt, but also in the fruit pulp when this is not mixed with the yogurt. By binding the fruit juice, Gelatin prevents its diffusion into the mass.



Dessert creams

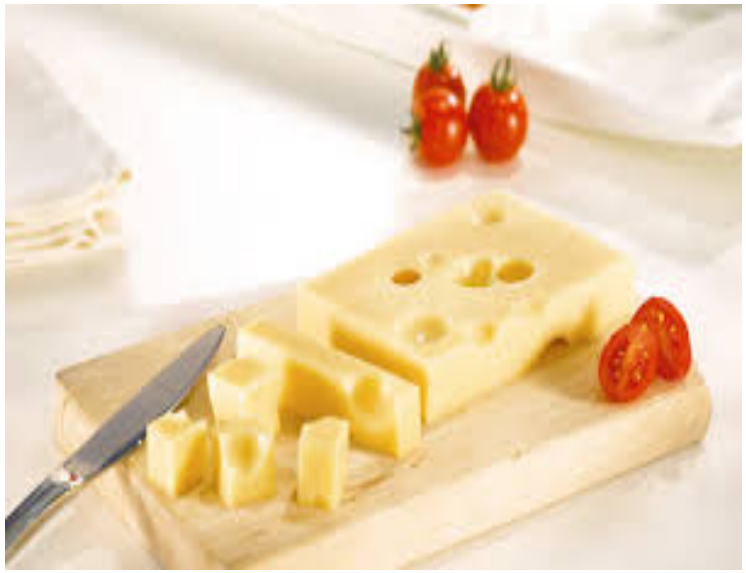
Dessert creams have a relatively thick consistency and are made from flavored, sweetened milk. Gelatin is used to achieve a smooth gel texture and prevent exudation on freezing or as a result of major temperature variations during storage. The amount of Gelatin in these preparations is very variable and can be as high as 2% depending on the characteristics of the desired product.

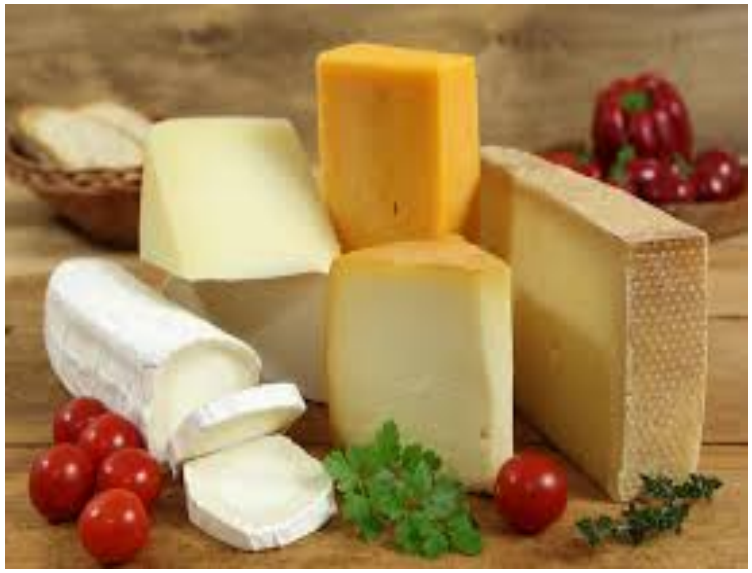
Ice creams and water ices

The presence of gelatin as a stabilizing agent is essential to maintain the emulsion in a stable state until the ice cream is consumed and to facilitate aeration, improve expansion and to prevent the formation of ice crystals during prolonged storage. Used in association with other stabilizing agents, Gelatin gives the finished product a remarkably slow melting rate and a characteristic texture.

Mousses

The foaming action of Gelatin is used in the preparation of a wide range of aerated products. Used in combination with other hydrocolloids, Gelatin gives excellent emulsion stability, facilitating aeration and good mix stability, avoiding separation of the ingredients and maintaining foam stability before gelation.





Cheeses

Gelatin can be used in cheese production to increase water binding and thus achieve better yields and lower fat content.

Gelatin will also strengthen the texture of the product and enhance flavor release.

Low calorie spreads

Low calorie spread products have reduced fat content and are either exclusively milk fat-based, vegetable fat-based, or a combination of the two types of fat. Preparation of a stable emulsion requires the presence of stabilizers and emulsifiers. The stabilizer must ensure good water binding and improve the structure, consistency and spreadability of the finished product. Good stabilization can be obtained with high Bloom Gelatin, added at doses varying from 1 to 2%, mainly because the melting point of that type of Gelatin (31-33°C) is very near to the melting point of the different ats present.Other hydrocolloids (e.g. pectin, carrageenan and xanthan) may be used in association with Gelatin in order to improve water binding.

GELATIN IN DAIRY PRODUCTS

Dairy products without gelatin? This is hard to imagine.

Gelatin type has to be carefully selected according to the dairy products to be manufactured. Bovine or pig skin gelatins are generally used to prepare dairy-based products. The table below describes the most appropriate gelatins to be used.

	GEL STRENGTH (BLOOM)	VISCOSITY (6,67%-60°C)	OTHER IMPORTANT CHARACTERISTICS	GELATIN CONTENT (%)
Creams, margarines				
Cream for long storage	150	medium	Melting point	0.2 -0.5
Whipped cream	150	medium		0.2 -0.6
Reduced-fat butter-type spreads	250	medium		0.5 -3.0
Home-made dessert mixes				
Custards, puddings	150	medium		0.2 -2.0
Mousses	150	medium	Foaming power	0.2 -2.0
Sour Creams	150	medium		
Pastry custards	150	medium		0.2 -1.0
				0.2 -3.0
Industrial dairy desserts				
Flavored milk jellies	150	medium	Foaming power	0.2 -2.0
Mousses, aerated desserts	150	medium		0.2 -3.0
Acidified milk products				
Yogurts (yogurt-based products), fermented milks	150-175	medium		0.2 -2.0
Desserts	150	medium		0.2 -2.0
Ice creams and sorbets	150	medium	Foaming power	0.2 -1.0

ABALONE

Transforming Life

Registered Office: 1596/302, 3rd Floor, New Building, Diwan Hall Gali, Bhagirath Palace, Chandni Chowk, Delhi – 110 006, India.
Tel: 011 23867204 Fax: 011 23867204 www.abaloneimpex.com