



Natural · Taste · Perfection

 **JENEIL**
CREATED BY UNIQUE BIOTECHNOLOGY







Headquarters in the USA, target market: America, Asia, Australia and New Zealand

WHO ARE JENEIL?

The company JENEIL Biotech Inc. was founded in 1995 by Dr. N. R. Gandhi and his wife Josephine in Wisconsin, which is the traditional cheese and dairy area of the United States. In order to serve the European business better, the European facility — JENEIL Bioproducts GmbH — started in the area of Munich in 2008.

Having the best possible customer service in mind, both companies do develop, produce and sell their specialties as far as needed independent. Synergies are used by a close cooperation.

Today the JENEIL companies are still family owned and independent. The company names are made up of the first names of the two children — Jennifer and Neil.



European headquarters in Germany, target market: Europe, Middle East, Africa and India.

Natural Taste Perfection —
Created by unique biotechnology.

JENEIL is not another flavor house. We do create authentic and characteristic flavor profiles by fermenting selected cheese, dairy and plant-based products. This results in liquids, pastes and powders, which do have a flavor concentration, 15 to 30 times greater than in the traditional cheese or dairy product.



CHEESE RIPENING TECHNOLOGY

At the traditional cheese making process the characteristic cheese flavor is developed by the metabolic process of the enzymes and bacteria which are added to the milk.

During the ripening process protein, lipids, and lactose are degraded by these enzymes and bacteria. This results in degradation products that are responsible for the typical characteristic flavor and aroma of cheese. Depending on the added enzymes or cultures different cheese kinds occur. The most common enzyme is rennet. It is used in almost every cheese kind. However, depending on further treatments and ripening conditions totally diverse cheese kinds are generated, from soft cheeses like Camembert to hard cheeses such as Emmenthal.

The Concentrated Cheese or Enzyme Modified Cheese (EMC) technology is based on the knowledge of the traditional cheese making process.

The two cornerstones are the specifically chosen enzymes, as well as the optimized fermentation parameters.





FLAVOR CONCENTRATION, WITH AN OPTIMIZED PROCESS

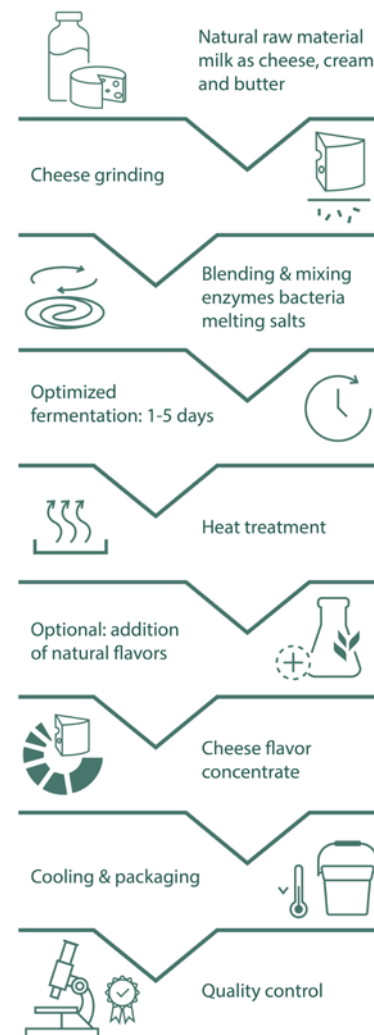
Due to the specific selection of the raw material and enzymes we are able to control the break down process of protein and lipids. That means, we determine which aroma and flavor compounds are formed.

The second cornerstone is the fermentation. Within the traditional cheese making process cheese ripens mostly in ripening cellars under cool conditions. Accordingly the ripening period is fairly long. In contrast, our fermentation process intends to conform to the ideal growing parameters of the enzymes. Usually cultures and enzymes prefer rather warm conditions. Consequently, the fermentation process can be accelerated.

It takes only one to five days to receive a cheese paste concentrate with a strength level which is about 15 up to 30 times greater than found in traditional cheese.

In some cases natural flavors are added to the cheese paste to complete or enhance the flavor profile of the natural cheese flavor.

PRODUCTION OF CONCENTRATED CHEESE







WIDE VARIETY OF CHEESE FLAVORS

According to the variety of cheeses which are available worldwide, we offer a wide range of concentrated cheese products:

The range covers variations of the most popular cheese sorts such as:

- ✓ Cheddar
- ✓ Gouda
- ✓ Italian hard cheese
- ✓ Blue cheese
- ✓ Emmenthal

Furthermore, it also encompasses specialty cheeses, such as Goat cheese, Parmesan type, Feta type, Camembert, or Raclette cheese.

In addition, we are always responsive to our customers' needs. If you do not find the right flavor in our product range, we will jointly find a customized solution that will stand out from the crowd.

Moreover, we work constantly on new innovative flavor solutions with regard to specific application demands, i.e. heat stability or product consistency.

The basic shape of our cheese concentrates is a creamy, pasty texture. They have to be refrigerated at 3 - 8°C while storing and shipping. Some of our customers do prefer to work with a powder, which is shelf stable at ambient temperature (20°C). In order to serve them, we are spray-drying the most popular cheese pastes.



YOUR ADVANTAGES IN COMPARISON TO NATURAL CHEESE OR CHEESE POWDERS

✓ Multiple flavor impact

The flavor concentration is 15 to 30 times greater than in natural cheese. This results in lower dosages and substantial cost savings. With lower addition rates, fewer calories are incorporated into the application.

✓ Standardized characteristic and intensive flavor profile

Using natural cheese, the flavor can only be standardized up to a certain point. Especially, bigger quantities have to be sourced from different plants during various times of the year. Taste variances in the cheese are the consequence.

Traditional cheese ripening is a very time-consuming process. In order to reduce costs, cheese is sold in many cases rather early. A rather plain flavor profile is the consequence.

Our natural cheese concentrates instead, do provide an intensive, distinctive, characteristic and well-balanced standardized flavor profile to maintain a consistent flavor profile in various food products.

✓ A large variety of cheese flavors

We offer a huge selection of various cheese flavors. Our standard program covers all popular cheese sorts. Beyond that, we develop continuously new or adjust already existing flavors according to our customers' needs. Nearly every cheese sort can be reproduced by our flavors.

APPLICATION AREAS FOR CONCENTRATED CHEESE TASTE

- | | |
|----------------------|---------------------------|
| ✓ Processed cheese | ✓ Salad dressings |
| ✓ Imitation cheese | ✓ Baked goods |
| ✓ Cream/fresh cheese | ✓ Filled pasta |
| ✓ Sauce and dips | ✓ Ready meals, food to go |

...and many others.

YOUR ADVANTAGES IN COMPARISON TO COMPOSED FLAVORS

✓ Authentic and characteristic taste – 100% natural

The flavor profile of matured cheese consists out of several hundred flavor components. It is impossible to imitate this flavor profile by blending different flavor chemicals. For that reason, composed flavors are typically not well-balanced.

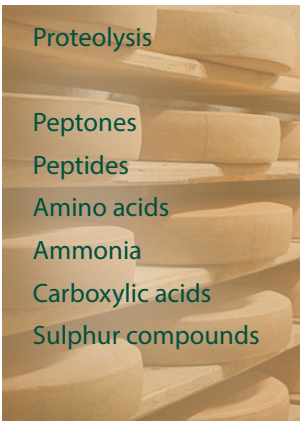
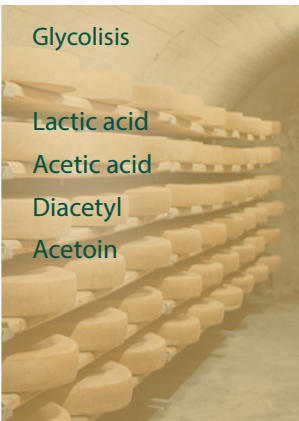
Our cheese concentrates instead, have an authentic and characterized flavor profile, that corresponds to the specific cheese type.

✓ Dry matter into the final product

Our cheese concentrates do have a similar dry matter as traditional cheese. Besides the flavor effect, the dry matter impact of the cheese concentrate should be considered.

✓ High heat stability

Our products are successfully used in foods that are heated to very high temperatures like for example processed cheese.

FAT	PROTEIN	CARBOHYDRATE
 Lypolysis Fatty acids Fatty esters Lactones Ketones Aldehydes Alcohols	 Proteolysis Peptones Peptides Amino acids Ammonia Carboxylic acids Sulphur compounds	 Glycolysis Lactic acid Acetic acid Diacetyl Acetoin



Several hundred components – well balanced – result in a rounded taste experience



YOUR ADVANTAGES IN COMPARISON TO OUR COMPETITION

✓ A unique range, with a wide variety

We offer a huge selection of various cheese flavors. In our standard range are different profiles of the most popular cheese sorts available. Beyond that, we develop continuously new or adjust already existing products to our customers' needs. Nearly every cheese can be offered with a higher flavor concentration.

✓ Close to the customer – with outstanding service

JENEIL maintains production plants in the United States and Europe. For that reason, we have short distances to many customers. In addition, we are represented in all countries we are serving with a local agent or distributor.

✓ No minimum order quantities

The smallest order volume for all our products is one packing unit. Most products of our standard range we do have in stock.

OUR WIDE PRODUCT-RANGE INCLUDES

Different varieties of:

- ✓ Emmenthal
- ✓ Gouda
- ✓ Cheddar
- ✓ Blue cheese
- ✓ Italian hard cheese

Several specialties:

- ✓ Goat cheese
- ✓ Manchego
- ✓ Kashkaval

...and many others.









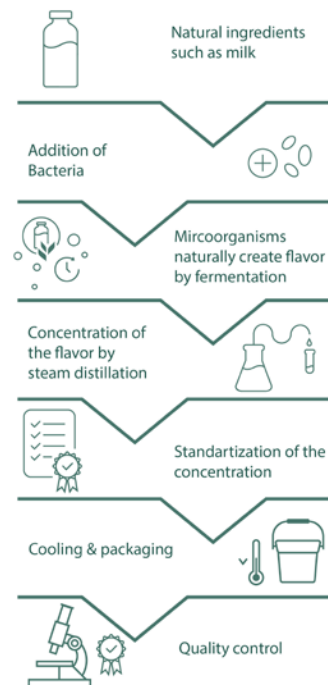
THE PRODUCTION OF DAIRY FLAVOR CONCENTRATES

At JENEIL milk is always the basic raw material for all products. Only first class cream and butter is sourced and purchased from selected suppliers.

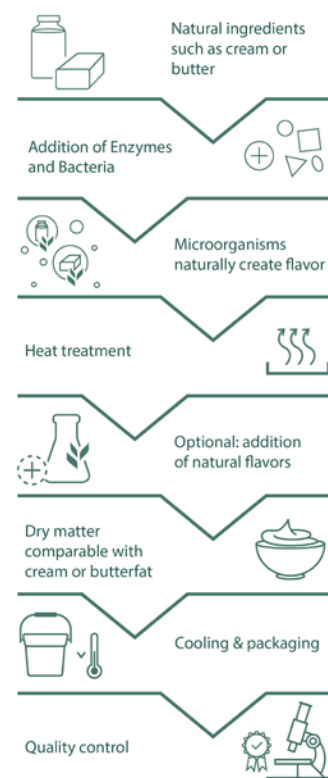
In our production plants the primary product milk is converted by microorganism to a flavor concentrate.



PRODUCTION PROCESS OF STARTER DISTILLATE

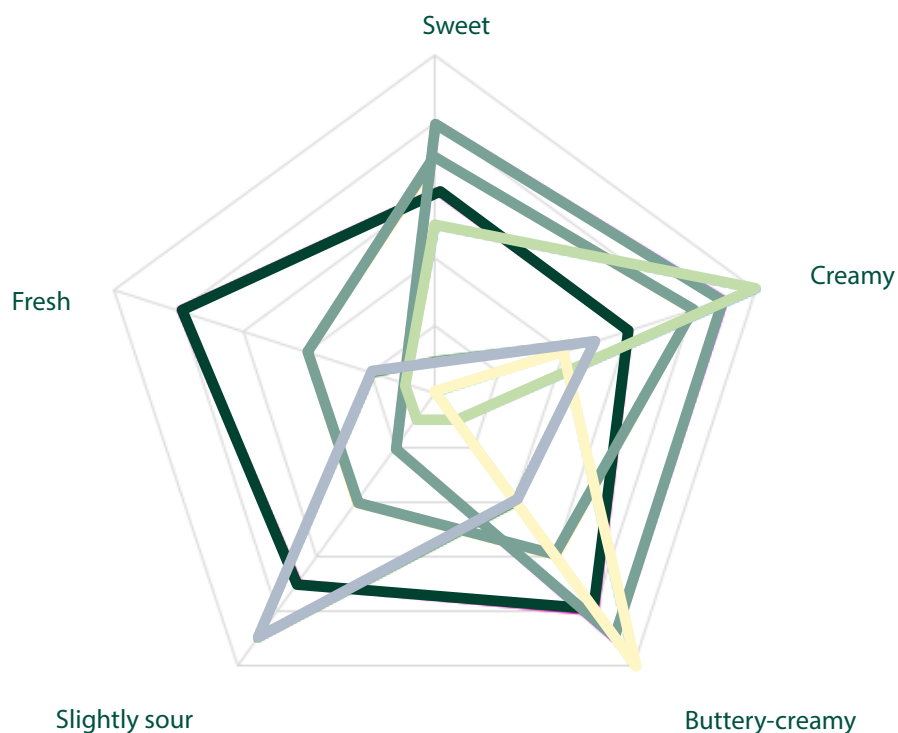


PRODUCTION PROCESS OF CONCENTRATED CREAM, BUTTER AND YOGHURT



FAT TASTES! WELL BALANCED CREAM CREATIONS

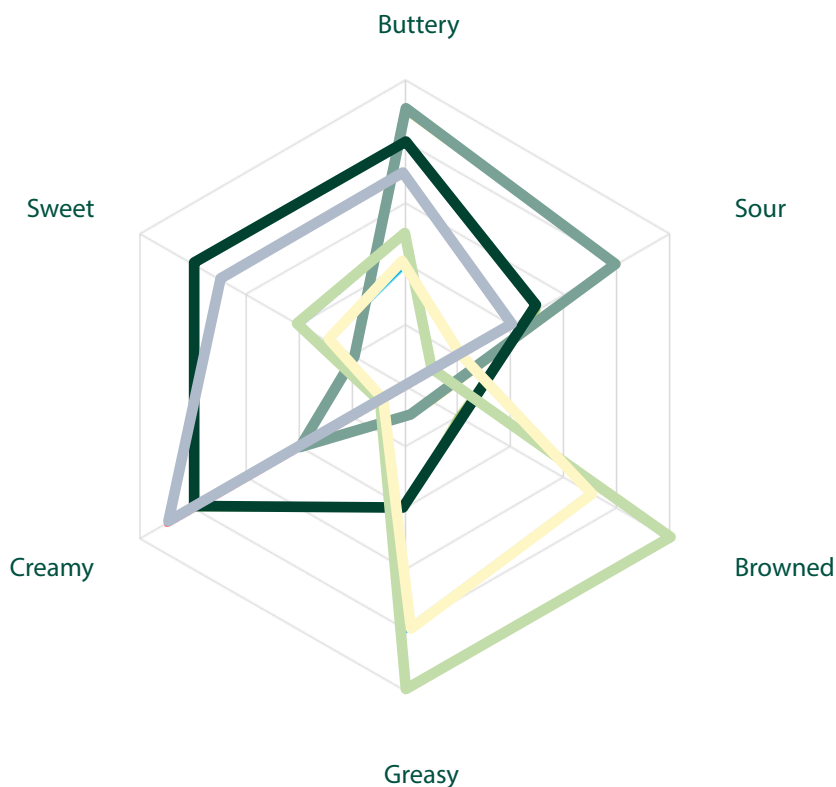
Depending on the country, application and consumer habits, different characteristics of milk fat are preferred. They do vary between e.g. sweet, sour, buttery, browned, creamy or fresh. During the production of concentrated cream, butter and yoghurt, enzymes and bacteria do create these different flavor features from the highest quality cream and butter. This fermentation technology turns milk fat in flavor concentrates, which do supply a multiple flavor concentration and taste impact to various applications. It is worth mentioning that the cream and butter concentrates from JENEIL do contain a similar fat content as the raw material.



Undesired taste notes, which could come from other ingredients (like vegetable fat, or stabilizers) could be masked and covered by adding a small quantity of a selected cream or butter concentrate.

The creamy / buttery taste could be intensified, if the flavor presence is not sufficient. In many formulations, it is common to replace the milk fat by vegetable fat. The main reason is to reduce formulation costs.

MORE THAN JUST BUTTER! WELL BALANCED BUTTER CREATIONS



The Starter Distillate products instead, are produced by a completely different technology. Here the basis is skimmed milk. Selected bacteria produces the flavor component diacetyl during the fermentation process and some other flavor components, which are typically found in cream and butter products. In order to concentrate those components the acidified milk is distilled.

Our dairy technologists do guide the fermentation process in such a way, that different flavor profiles are achieved at high concentration. By applying the JENEIL cream and butter concentrates it is possible to turn various food products into a thoroughly different taste experience. These are just some of the enormous application possibilities: A buttery note is completing various food products to rounded, well-balanced eating pleasure.

The product's consistency could be managed by selecting a suitable fat mixture, but the delicious taste of cream or butter is always missing. The same is true for low-calorie dishes. Milk fat supplies an enormous taste - but also a lot of calories.

By applying JENEIL cream and butter concentrates, a perfect dish could be created: Low calories with full consumption pleasure.



YOUR ADVANTAGES IN COMPARISON TO TRADITIONAL CREAM OR BUTTER



✓ Multiple flavor impact

The flavor concentration is 15 to 30 times greater than in traditional cream or butter. This results in lower dosages and substantial cost savings. With lower addition rates, fewer calories are incorporated into the application.

✓ Long term reliability

By using natural cream or butter the flavor can only be standardized up to a certain point. Especially, bigger quantities have to be sourced from different plants during various times of the year. Taste variances in the cream and butter are the consequence.

Dairy prices do vary a lot. At JENEIL we can offer prices for twelve months. That is reducing your risk in the calculation.

Fresh cream is only good for a few days. The JENEIL cream concentrates do have a shelf life of at least six months.



YOUR ADVANTAGES IN COMPARISON TO COMPOSED FLAVORS

✓ Creamy without cream? You can't beat mother nature!

With composed flavors people often try to imitate the original/real natural product. The richness of real cream can't be achieved by blending different flavor chemicals, because the taste profile of cream is too complex. A well-balanced, rich taste profile can only be achieved by using real cream. Thanks to our special fermentation technology a multiple flavor impact is released from the raw material.

✓ Dry matter into final product

Our dairy concentrates do have a similar dry matter like cream or butteroil. Besides the flavor effect, the dry matter impact of the dairy concentrates should also be considered.

✓ High heat stability

Our products are successfully used in foods that are heated to very high temperatures. Examples of this are UHT heated sauces, but also baked goods.





YOUR ADVANTAGES IN COMPARISON TO OUR COMPETITION

- ✓ A unique range, with a wide variety
We offer a huge selection of various dairy flavors. In our standard range different cream and butter profiles are available. Beyond that, we develop continuously new formulations or adjust already existing products to our customers' needs.
- ✓ Close to the customer – with outstanding service
JENEIL maintains production plants in the United States and Europe. For that reason, we have short distances to many customers. In addition we are represented in all countries we are serving with a local agent or distributor.
- ✓ No minimum order quantities
The smallest order volume is for all products one packing unit. Most products of our standard range we do have in stock.
- ✓ Production in Europe and the USA

EXEMPLARY APPLICATION AREAS FOR CONCENTRATED CREAM, BUTTER AND YOGHURT

- ✓ Desserts
(Crème brûlée, Panna cotta)
- ✓ Ice creams
- ✓ Puddings
- ✓ Sauce
(Béchamel, Hollandaise,
vanilla, caramel)
- ✓ Cream soups
- ✓ Potato products
- ✓ Toppings / icings
- ✓ Fillings
(for cookies and chocolates)
- ✓ Fudge

...and many others





THE PRODUCTION OF CONCENTRATED PLANT-BASED FLAVORS

Plant-based cheese alternatives are getting more popular, since many consumers see them as a healthy alternative to traditional cheese products. The disadvantage of the plant-based ingredients is always the flavor! None of them has a cheese taste. Since the eating pleasure is still the core argument for consuming food in Europe and many other countries, the addition of an authentic natural plant-based cheese flavor is without an alternative.

The food specialists at JENEIL developed concentrated plant-based cheese flavor profiles, just for this segment. The experts took advantage of decades of experience in the creation of cheese flavor profiles, when they created this new and innovative concentrated plant-based dairy flavor variety.

Of course, the concentrated plant-based cheese flavors can also be used in other non-dairy food applications, which should achieve a milk/cream or butter flavor. Examples could be: Sauces, dressings, or crackers.

PRODUCTION PROCESS OF PLANT-BASED FLAVORS





OUR PLANT-BASED FLAVOR ALTERNATIVES

Our natural plant-based flavors offer a diverse variety of authentic natural plant-based flavors for plant-based cheese and dairy applications. They are developed by our technologists, who have decades of experience in analyzing and creating cheese and dairy flavor profiles – designed to perform in diversified bases.

Our natural plant-based flavors are available in a wide selection of cheese, butter and milk profiles in flavoring powder forms.

OUR WIDE PLANT-BASED PRODUCT RANGE INCLUDES

- ✓ Cream cheese
- ✓ Mozzarella
- ✓ Cheddar
- ✓ Emmenthal
- ✓ Italian hard cheese
- ✓ Gouda
- ✓ Sour cream
- ✓ Butter

...and many others.





YOUR ADVANTAGES BY USING OUR PLANT-BASED FLAVOR CONCENTRATES

- ✓ **100% natural**
Our natural plant-based flavors are 100% natural.
- ✓ **Taste perfection**
Our natural plant-based flavors give many plant-based food products a characteristic cheese flavor profile. Balanced cream flavors and butter flavors could be achieved in several dishes.
- ✓ **Long shelf life**
Our natural plant-based flavors have a shelf life of minimum 12 months in its original container in compliance with the storage conditions.
- ✓ **Competitive prices**
We gladly generate your personal offer.



APPLICATION EXAMPLES: PROCESSED CHEESE AND CHEESE ANALOGUES

The usage of natural dairy flavors in processed cheese and cheese analogs is already established for many years. This is because of the multiplicity of advantages our dairy flavors give the manufacturers:

- ✓ Significant cost reduction and savings up to 15%.
- ✓ Frequently the cheese flavor is not strong enough to allow the final product a characteristic flavor profile. Our dairy flavors provide a unique, balanced, and standardized flavor profile.
- ✓ When using natural cheese, the flavor can only be standardized up to a certain point. With our products the flavor of the cheese can be standardized from batch-to-batch.
- ✓ Intensive flavor until the end of shelf-life.
- ✓ Different flavor profiles could be produced with one cheese base.
- ✓ Flexible and elastic cheese slices with intensive flavor until the end of shelf-life, because only in our EMC all residual proteases are inactivated.
- ✓ A large portion of the flavor components will be lost due to the high temperatures needed for the production of processed cheese. Our natural flavors are heat stable during the whole production process.
- ✓ Our flavors contribute dairy dry matter to the formulation.
- ✓ As we are specialized in natural dairy flavors, we can offer a wide selection of various cheese flavors.





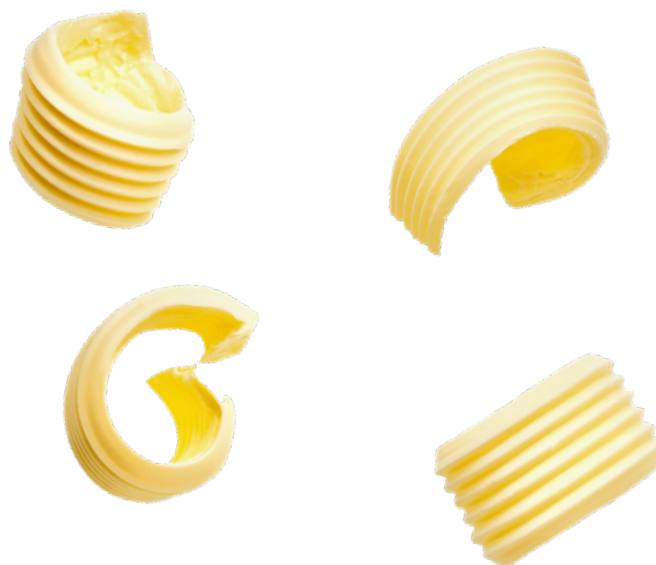
APPLICATION EXAMPLES: VEGETABLE FATS, SPREADS AND MARGARINE

It seems that in today's health conscious world many consumers are choosing margarines and butter substitutes.

- ✓ Many of these products such as margarine and other butter substitutes often have a neutral taste of vegetable fat. This lack of flavor and taste can be compensated by utilizing our line of all natural butter flavors.
- ✓ Our butter and cream flavors add back that authentic butter note and mouthfeel that are missing at an affordable price.
- ✓ A flavorful and also cost-effective solution is the usage of starter distillate for this kind of application. The distillate balances the missing richness without significant increase of your formula costs.
- ✓ Our range of butter flavors vary from fresh-cultured butter profiles to brown-intensive or butter lards profiles.

USAGE RECOMMENDATION

Our butter flavors (LBG-range) which are based on real butter fat should be added with the lipid phase. However, starter distillate is added along in the water phase.





APPLICATION EXAMPLES: CREAM CHEESE

The usage of our cheese and dairy flavors do not only support the development of new flavor creations they also help to improve the taste of low-fat and vegetable fat based products, respectively.

- ✓ Various new flavor creations can be formulated with the aid of our wide range of products.
- ✓ Microbiological safeness: no mold, yeast, or active enzymes present.
- ✓ Standardized flavor profiles from batch-to-batch.
- ✓ Full-bodied and rich taste experience, even with fat free or fat reduced cream cheese preparations.
- ✓ Flavor improvement for cream cheese preparations which are made with vegetable fat.
- ✓ As we are specialized in natural cheese and dairy flavors, we can reproduce almost every cheese kind or dairy product as flavor.

USAGE RECOMMENDATION

In general the dairy flavor is added after the separation process. Our flavors are very heat stable. The dosage depends on your requirements. A distinctive cheese flavor can be achieved with dosages of only 1 to 3%.

In fat reduced cream cheeses a creamy/buttery flavor can be achieved by adding only 0.05 to 0.2% of our starter distillate. The exact dosage of this natural butter type flavor depends on the fat content of the cream cheese. As lower the fat content, the higher should be the dosage.





APPLICATION EXAMPLES: SOUPS, DRESSINGS, SAUCES AND DIPS

Canned or instant dressings, soups, sauces and dips are mostly low-priced products. The formulations base on inexpensive ingredients. This situation challenges every manufacturer to find cost-effective solutions to create a great well-rounded product but keeping the costs low. Concerning flavor, we have the solution for your challenge:

- ✓ The unique flavor profiles of our cheese and dairy flavors give the products a valued characteristic flavor.
- ✓ Our cheese and dairy flavors are also very cost-effective by reducing the levels of cheese and dairy ingredients in your formula while adding flavor and standardization at the same time.
- ✓ The intense flavor concentration and the heat-resistance make our flavor products especially attractive in these applications.
- ✓ Adding specialty cheese flavor adds value to your products. JENEIL Bio-products offers a broad line of specialty cheese and dairy flavors that will make your products truly unique and distinctive.

USAGE RECOMMENDATION

Our flavors may be added along with further ingredients, i.e. spices and herbs.

When it comes to cheese flavor a dosage of 1 to 2% is sufficient to create a distinctive flavor.

With our cream, dairy and butter flavors a well-rounded creamy rich flavor can be created without adding any additional cream. A dosage of 1% at the most is enough.



APPLICATION EXAMPLES: DESSERTS, ICE CREAM, CARAMEL, SWEET FILLINGS AND FROSTINGS

The essential ingredients of dessert products such as custards, mousses, ice creams, toppings, or frostings are cream or other high-quality dairy ingredients, like whole milk, cream cheese or butter. Within the industrial manufacture these ingredients are substituted by skimmed milk alternatives, starch and other fillers. Thereupon the flavor is left behind.

- ✓ The lack of flavor can be compensated by adding one of our natural dairy flavors which generate a creamy smooth flavor and mouthfeel and keeping the formulation costs low.
- ✓ Cream may be replaced partly or entirely by using low-fat milk and 0.1% of our natural Butter Type Flavor 15X (Starter Distillate 15000). It is a masking flavor providing mouthfeel and substituting the lacking creamy taste in the product.
- ✓ Our dairy flavor product range contains various flavors, such as yoghurt, sour cream, or cream cheese. There are plenty of opportunities for new innovative dessert products.

USAGE RECOMMENDATION

The addition of 0.1% of our Butter Type Flavor 15X (Starter Distillate 15000) increases the creamy taste and mouthfeel of dessert products considerably.

The usage of 2% of our Cream Cheese Type Flavor CCG-4502 provides a creamy-rich, well balanced and authentic cream cheese flavor.

Two percent of our Yoghurt Type Flavor YOG-9032 generates a lactic fresh character in various desserts.

By adding 0,1 % of our natural Cream (LCG-1610) concentrate in powder form, many dessert products could receive a well balanced, rich taste.



APPLICATION EXAMPLES: PLANT-BASED CHEESE ALTERNATIVES

In the ever-changing food landscape, plant-based alternatives are catalysts for change, providing food companies with numerous advantages and exciting culinary opportunities. Among them, plant-based cheese flavor concentrates showcase the transformative power of innovative ingredients.

- ✓ Plant-based cheese flavor concentrates address the growing demand for healthier, sustainable choices, reducing ecological footprints while meeting modern consumer preferences for ethical ingredients.
- ✓ Our plant-based cheese flavor concentrates enhance a variety of products, from snacks to gourmet dishes. They drive innovation by infusing products with authentic cheese flavor and texture.
- ✓ JENEIL's naturally concentrated plant-based flavors offer a cost-effective solution for companies seeking competitiveness while delivering exceptional taste and quality to customers.
- ✓ Using plant-based flavor concentrates, food companies can lead the growing market for plant-based alternatives, offering delicious, nutritious, and sustainable products that reshape the culinary scene.
- ✓ JENEIL's concentrated plant-based flavors offer distinct cheese profiles for plant-based foods. Additionally, our natural concentrates include various butter and milk flavors.

USAGE RECOMMENDATION

With 2.0% of our natural plant-based flavor MFG-92200, milk type, a milky creamy taste is added to the plant-based variant. Other of our natural plant-based concentrates, such as our natural flavor cream cheese type (CCG-91040) also significantly improves the purely vegetable „cream cheese“. This variant additionally enhances the characteristic, tart taste of the spread.



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