

## Food grade CMC

Food grade CMC Sodium carboxymethyl cellulose has multiple functions in foods such as thickening, suspension, emulsification, stabilization, shape retention, film formation, expansion, preservation, acid resistance and health care. It can replace guar gum, gelatin, The role of agar, sodium alginate and pectin in food production is widely used in modern food industry, such as lactobacillus beverages, fruit milk, ice cream, sherbet, gelatin, soft candy, jelly, bread, fillings, pancakes , Cold products, solid beverages, condiments, biscuits, instant noodles, meat products, pastes, biscuits, gluten-free bread, gluten-free pasta, etc. Used in food, it can improve the taste, improve the grade and quality of the product, and extend the shelf life.

Kimacell® Food grade CMC can effectively reduce the syneresis of food and extend the shelf life of food; it can better control the size of crystals in frozen food and prevent the oil and moisture layer; when added to biscuits, Kimacell® Food grade CMC can achieve anti-cracking effect. Better water absorption and retention, and enhance the stability of biscuits by improving their bonding properties. The low and medium viscosity in the Kimacell® Food grade CMC series provides stable performance and effectively meets customer needs.

### Typical properties

Appearance	White to off-white powder
Particle size	95% pass 80 mesh
Degree of substitution	0.75-0.9
PH value	6.0~8.5
Purity (%)	99.5min

### Popular grades

Application	Typical grade	Viscosity (Brookfield, LV, 2%Soln)	Viscosity (Brookfield LV, mPa.s, 1%Soln)	Degree of Substitution	Purity
For food	CMC FM1000	500-1500		0.75-0.90	99.5%min
	CMC FM2000	1500-2500		0.75-0.90	99.5%min
	CMC FG3000		2500-5000	0.75-0.90	99.5%min
	CMC FG5000		5000-6000	0.75-0.90	99.5%min
	CMC FG6000		6000-7000	0.75-0.90	99.5%min
	CMC FG7000		7000-7500	0.75-0.90	99.5%min

#### **Function of CMC in food production**

1. Thickening: High viscosity can be obtained at low concentration. It can control the viscosity during food processing, while giving the food a smooth feeling.
2. Water retention: reduce the syneresis of food and extend the shelf life of food.
3. Dispersion stability: maintain the stability of food quality, prevent oil and water layer (emulsification), control the size of crystals in frozen food (reduce ice crystals).
4. Film-forming property: A layer of glue film is formed in fried foods to prevent excessive absorption of fats and oils.
5. Chemical stability: It is stable to chemicals, heat and light, and has certain anti-mildew properties.
6. Metabolic inertness: As an additive to food, it will not be metabolized and does not provide calories in food.
7. Odorless, non-toxic and tasteless.

#### **Performance of food grade CMC**

Food grade CMC has been used as an additive in the edible food industry for many years in the world. Over the years, Food grade CMC manufacturers have continuously improved the inherent quality of CMC. Our company has carried out continuous research work on the acid and salt resistance of Food grade CMC. The quality of the product has been unanimously affirmed by large food manufacturers at home and abroad, which has played a very important role in improving the quality of food production.

Food grade CMC compared with other similar products

- A. The molecules are evenly distributed, and the volume proportion is heavier;
- B. High acid resistance;
- C. High salt tolerance;
- D. High transparency, very few free fibers;
- E. Less gel.

#### **The role in different foods production and processing**

1 The role of ice cream in the production of cold drinks and cold food:

- 1.) Ingredients of ice cream: milk, sugar, emulsion, etc. can be evenly mixed;
- 2.) Good forming performance, not easy to break;
- 3.) Prevent ice crystals and slippery tongue touch;
- 4.) Good gloss and beautiful appearance.

2 The role of noodles (instant noodles):

- 1.) When stirring and pressing, it has strong viscosity and water retention, and contains water, so it is easy to stir;
- 2.) After steam heating, a thin film protective layer is produced, the surface is smooth and shiny, and it is easy to process;

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- 3.) Low oil consumption for frying;
- 4.) It can improve the noodle quality and strength, and it is not easy to be broken during packaging and transportation;
- 5.) The taste is good, and the blisters are not sticky.

3 The role in the production of lactic acid bacteria beverage (yogurt):

- 1.) Good stability, not easy to produce precipitation;
- 2.) It can extend the shelf time of the product;
- 3.) Strong acid resistance, PH value in the range of 2-4;
- 4.) It can improve the taste of the drink and make the entrance slippery.

### Food grade CMC Uses and functions

#### 1. Uses in alcoholic products

Make the taste mellow, fragrant, after taste long;

Used as a foam stabilizer in beer production to make the foam rich and durable and improve the taste.

#### 2. Uses in liquid beverages

Used for fruit tea, fruit drink, vegetable juice, etc., can make pulp, all kinds of solid or other substances suspended in the container, uniform and full, bright color and eye-catching, improve the taste;

Used in neutral flavoring milk drinks such as cocoa milk to increase the viscosity of cocoa milk and prevent precipitation of cocoa powder;

Keep the stability of the drink and prolong the fresh life of the drink.

#### 3. Uses in jelly, custard, jam and other food

Thixotropy is suitable;

It plays an important role in gelling system.

#### 4. Uses in instant noodles

Can prevent dehydration contraction, improve the expansion rate;

Easy to control water, can reduce water supply, reduce oil content;

Make the product uniform, structure improvement;

Make the surface bright, smooth surface.

#### 5. Uses in bread cakes

Improve the internal structure, enhance the processing mechanism and water absorption of dough;

Make baking bread cake honeycomb uniformity, volume increase, surface bright;

Prevent the gelatinized starch from aging and reviving, prolong the preservation period;

Adjust the flour firmness to prevent the bread cake from drying out and maintain its shape.

#### 6. Uses in frozen pasta point

The product can keep its original state after being frozen for several times;

Extend the shelf life.

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### **7. Uses in cookies and pancakes**

Improve the texture of flour, adjust flour gluten;

Make the biscuit, pancake shape, cake body smooth, reduce the crushing rate;

Prevent moisture evaporation, aging, make cookies, pancakes crisp and delicious.

### **8. Uses in ice cream**

Improve the mixture viscosity, prevent fat floating;

The uniformity of the system was improved and the formation of large ice crystals was reduced.

Enhance the melting resistance of ice cream, endowing delicate and smooth taste;

Reduce the use of solid materials and reduce production costs.

### **9. Uses in edible composite film**

As a basic film forming material, the composite film has good mechanical strength, transparency, heat sealing, printing, gas resistance, water resistance, to meet the needs of different food packaging;

Has good moisture resistance and gas resistance performance;

Extend the shelf life of fruits and vegetables.

### **10. Uses in brown lactobacillus beverage**

Reduce the centrifugal precipitation rate of products;

Reduce whey separation;

Maintain system stability and prolong shelf life.

### **11. Uses in sour dairy products**

Improve the consistency of yoghurt, improve the texture, condition, taste, stability of the system;

Prevent whey precipitation in the shelf life, improve the structure of yoghurt;

Strong precipitation resistance, good thermal stability and acid resistance.

### **12. Uses in condiments**

Adjust the viscosity, increase the solid content, make its tissue soft, delicate taste, lubrication;

It can emulsify and stabilize, improve quality organization, improve color, aroma and taste effect of condiments, and prolong shelf life

### **13. Uses in Specialty products**

Ultra high viscosity products: used for meat preservation and other food industry with particularly high requirements for viscosity;

High transparency fiber free product: This product has a low DS ( $\leq 0.90$ ), a clear and transparent aqueous appearance, and almost no free filaments. It not only has the ability to maintain flavor of products with low degree of substitution, but also has the stability of products with high degree of substitution and high transparent appearance. Used in drinks with special requirements on transparency and fiber content.

Granulated products: improve the environment, reduce dust, dissolve faster.

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**Packaging:**

Food grade CMC Product is packed in three layer paper bag with inner polyethylene bag reinforced , net weight is 25kg per bag.

12MT/20'FCL (with Pallet)

15MT/20'FCL (without Pallet)