

Biotec Inc.

BTC coating for cheeses: from the brining to the consumer's table

Cheese is a universally popular food. It exists in every part of the world and can be produced by using milk from different mammalian animals. It is one of the best food products for humankind, not only due to its undisputed nutritional value, but particularly because of the large variety of organoleptic properties they have, which makes it highly enjoyable.

The nature of milk and cheesemaking show us a myriad of possibilities, which is virtually unlimited. The features of a particular type of cheese are determined by milk composition and microbiological, biochemical, physical, physical-chemical, and mechanical factors.

After moulding and pressing the cheese, brining takes place. This is a transitional stage until the product reaches maturity. During this process, cheese is protected from undesirable microbial spoilage, the curd is drained and both the taste and the enzymatic activity can be modified. Afterwards, we move onto the maturing stage, in which the texture and the flavor are developed and cheese adopts its typical appearance.

The appearance plays a role in the definition of the product and the relevant requirements each type of cheese has to comply with, as well as the consumer's choice. The cheese rind is of special importance in some varieties, since it protects the mass and provides a surface in which water vapor and gas exchanges can take place as a result of the fermentation. In every food production process, materials in contact with food are considered essential, not only to avoid food deterioration, but also to prevent migration of any foreign substances into the product.

Biotec Inc. has created a product line to protect the surface of cheeses from fungal growth and yeast contamination from the brining to the final product. Natamycin, an active ingredient known since 1955 for its antifungal properties, is the best option to prevent yeast and mold from growing, since this ingredient does not show antibacterial activity and it does not interfere with the natural maturing process of cheese.

Cheese maturing and storage conditions provide an ideal environment for fungal and yeast growth. Removing surface fungal and yeast growth has no influence on the cheese's internal metabolites. Therefore, no guarantees can be offered to the consumer.

While working in optimal hygienic conditions and applying the best practices represent the ideal scenario, it is not enough. This is the reason why prevention is paramount. Hygiene is the best way to prevent: the more hygiene there is, the less number of products will be required and the more natural the process will be.

Our product line, named 'BTC', includes water-based and vinylic coatings.

BTC BS is a water-based dispersion made from natamycin. It is designed to protect the brine and the cheese rind.

After cooling, cheese already has been given an antifungal treatment, which saves time and effort.

This product is ideal for cheeses which are packaged directly after removing them from the brine (such as mozzarella, bar cheese and Port Salut).

BTC IA is a ready-to-use, water-based coating made from natamycin and potassium sorbate. Strong adhesion and dosage are secured after brine treatment, in case BTC BS is not used or after three weeks if this product is used.

BTC IV is a ready-to-use, vinylic coating made from natamycin and potassium sorbate using polyvinyl acetate as a base. There exist different degrees of viscosities available, which can be adapted to the needs each particular case requires.

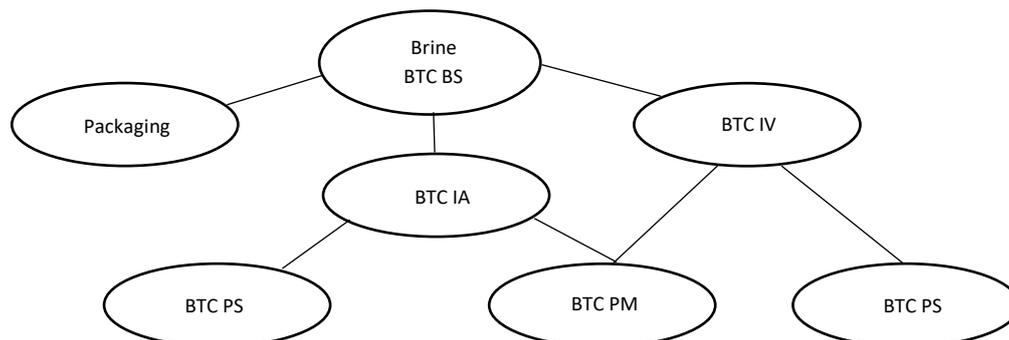
Both BTC PM and PS are vinylic coatings made from natamycin and potassium, specially designed to give cheese the finishing touches. There are different types of viscosities as well as natamycin to apply manually or using a spray.

The following chart provides a summary of the mentioned coatings:

Coating	Composition	Viscosity cP	Application
BTC BS	Natamycin: 50,000 ppm	1000 – 5000	Brine treatment
BTC IA	Natamycin: 2000 ppm Potassium sorbate: 2%	< 500	Water-based immersion
BTC IV	Natamycin: 1000 ppm Potassium sorbate: 2%	500 – 2000	Vinylic immersion
BTC PM	Natamycin: 200 ppm Potassium sorbate: 2%	3000 – 8000	PVA manual paint
BTC PS	Natamycin: 400 ppm Potassium sorbate: 2%	1000 – 3000	PVA spray paint

All of the products we offer provides an integrated treatment of cheese, from the brining to the final touches.

The following diagram shows the many uses of our coatings:



Our motto (“turning your problems into our challenges”) is ever-present: we remain at our clients’ side every step of the process to provide support required in every stage of development. In January 2009, Biotec S.A. has become certified to ISO 22000, which vouches for our investigation and development processes as well as our commercial activities, such as manufacturing, providing technical assistance and selling food additives.

Due to the fact that we create our own coatings, we offer you the possibility of requesting a custom-made product, from determining of natamycin content to choosing the degree of viscosity. We ensure that all our coatings have natamycin content in them.