

# Pack-Age®



## Get more from your cheese, naturally We make it happen

Pack-Age® – an innovative ready-to-use solution for the natural ripening of hard to semi-hard cheese.

The cycling heroes of yesteryear used to stuff newspapers under their tops to protect them from the wind and freezing temperatures. In stark contrast, today's professional cyclists wear high-tech clothing featuring breathable membranes and wind stoppers. DSM, the global life sciences and materials sciences company, has adapted this high-tech clothing technology to the world of cheese, and has developed Pack-Age®, a revolutionary cheese ripening solution that not only offers complete protection to all your favorite cheeses, but also allows them to ripen to the perfect flavor.

There are two conventional processes for the ripening of hard to semi-hard cheeses. The most traditional way, known as 'natural ripening', involves air-drying the cheeses during ripening, and applying a coating to protect them from external factors. As some mold growth cannot be prevented, in addition to cheese coatings containing mold inhibitors like natamycin, washing the surface with different cleaning agents can be used as an alternative to clean the cheeses during and after ripening. The other process, used to obtain young cheese, involves packing the cheese in a seal-tight film straight after brining. This film-packed cheese has a typical flat taste, and is soft and rindless.

With Pack-Age® – the newly developed packaging solution for ripening cheese – you can now ripen your cheese 'naturally' by covering it with a membrane. This membrane is moisture-permeable, so cheeses can still dry under air as they do in the natural ripening process. The oxygen barrier properties of the Pack-Age® membrane opens up opportunities for clean label cheese, however when combined with Delvo®Cid (a natural mold and yeast inhibitor) the selective gas permeability of the membrane offers the best possible protection against yeast and mold growth.



### The key features of Pack-Age® ripening solution:

- optimal cheese value (higher yields, reduced operational costs)
- ripened flavor and natural dry rind
- about the same texture as that of naturally ripened cheese
- clean label opportunities
- 5-10% lower carbon footprint compared to coated cheese
- opportunities to develop new and outstanding cheeses

### Natural ripening in Pack-Age® membrane

DSM's Pack-Age® cheese-ripening solution can be used to ripen semi-hard to hard cheeses and obtain a natural taste, texture and dry rind. The food-contact-approved ripening solution is based upon the permselectivity of the polymer structure, which enables complete control of the moisture level and the gases passing through. As the membrane is moisture-permeable, during ripening the cheese will dry as natural ripened cheeses would, and its taste, texture and dry rind will all develop in a similar way. When applied to Gouda cheese, the new ripening solution has resulted in moisture loss falling by as much as 50% (see graph below). Its polymer blend and layer structure can be fine-tuned to obtain the best possible natural ripening.

## Pack-Age® bags: a ripened flavor and natural texture at a higher yield

During ripening, each cheese develops its own particular balance in flavor and texture. A comparative tasting session at NIZO proved that DSM's Pack-Age® cheese-ripening solution can still provide this balance even with a 50% reduction in moisture loss. The texture of the cheese covered by the Pack-Age® membrane was about the same as that of naturally ripened cheese. As far as the overall flavor was concerned, Pack-Age® ripened cheese closely followed the naturally ripened cheese. The film-ripened cheese finished bottom of the pile.

## Greater protection: Pack-Age® with Delvo®Cid

The oxygen barrier properties of the Pack-Age® membrane offer opportunities for clean label natural ripened cheese. However, when treating the cheese just once with Delvo®Cid, the Pack-Age® ripening membrane provides superior protection against yeast and mold growth.

## Easy to use

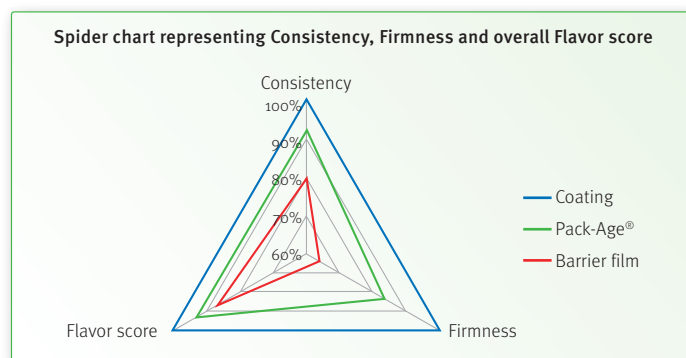
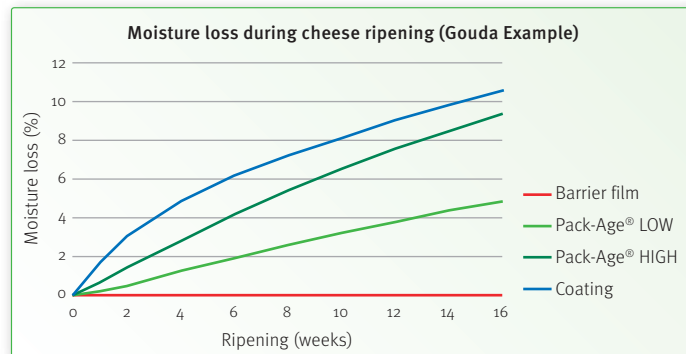
Today DSM's Pack-Age® cheese-ripening membrane can be applied in the form of a ready-to-use vacuum bag for manual to full automatic operation. It can be tailor-made to meet your specific needs (e.g. size, degree of permeability, printing, and the like). Another advantage of DSM's new ripening solution is that the rind does not need to be removed prior to slicing and grating, saving time and increasing productivity.

## Substantial carbon footprint reduction

Compared to coated cheese, Pack-Age® saves 1,320 kg of CO<sub>2</sub> per kg sliced cheese. An extensive Life Cycle Analysis shows Pack-Age® realizes a 5-10% lower carbon footprint.

## More cheese varieties, and greater cheese quality

Pack-Age® can be fine-tuned to meet your own specific needs, and thus enable you to produce a variety of outstanding cheeses. This revolutionary, ready-to-use ripening solution will be all you need to set unprecedented cheese-ripening standards. So what are you waiting for? Contact us and we will introduce the cheese-ripening techniques of the future to your company, today.




## Unlimited experience

With over a century of experience under its belt, DSM is in the perfect position to offer unparalleled expertise in a variety of sectors, from the production and application of effective preservation solutions (through its DSM Food Specialties division – a pioneer in natamycin-based products), to materials for barrier and specialty films for the packaging industry (through its DSM Engineering Plastics division). DSM Food Specialties' Pack-Age® cheese-ripening solution offers the best possible combination of value, cheese taste and texture, and preservation quality.

For Protection You Can Trust™ contact us now:

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