

## About us

*Prayon is a leading producer of purified phosphoric acid and food-grade phosphates. Our food applications laboratory enables us to meet market requirements and offer innovative products in line with the latest trends in the food industry.*

Food-grade phosphates are produced using high-quality purified phosphoric acid.

The Prayon Group has a global reputation for its phosphoric acid technology. Jointly owned by the Office Chérifien des Phosphates (OCP) and Société Régionale d'Investissements de Wallonie (SRIW), the Group consists of more than 20 companies in more than 10 countries. It employs over 1,400 people and generates a turnover of approximately €680 million (2010).

With production facilities in Belgium (Engis and Puurs), France (Les Roches de Condrieu) and the USA (Augusta, Georgia), Prayon produces a full range of purified phosphoric acids, sodium, potassium and calcium phosphates and blends mainly used in the meat, poultry, seafood, baking and dairy industries.

### Food-grade purified phosphoric acid and phosphates supplied by Prayon:

- are controlled using an HACCP approach on all production lines and are ISO 22000 certified;
- meet current legal requirements;
- are kosher- and halal-certified.

Phosphates perform a wide range of functions in processed food products. These include protein modification, sequestration of minerals that may catalyse oxidative rancidity and pH adjustment in meat, poultry and seafoods.

Baked goods are leavened with phosphates that contribute to texture, colour, rise and desirable crumb characteristics.

The smooth mouthfeel, even melt and sliceability of processed cheeses benefit from the buffering capacity and protein dispersion properties provided by phosphates.

A variety of beverages are acidified by purified phosphoric acid.

Phosphates are also widely used to balance the mineral content of foods (Na, K, Ca, etc.).



## We achieve our goals through strong ethics and solid core values

- **Customer-focused:** We listen to your needs and fulfil your requirements. We are competitive and flexible.
- **People-oriented:** We value the experience, creativity and professionalism of our employees. We are a winning team.
- **Technology:** We maintain state-of-the-art facilities through continuous process improvement and innovation.
- **Quality of life:** We practise Responsible Care. We believe in sustainable development. We are committed to enhancing the quality of life.



ISO 9001 (Quality) / OHSAS 18001 (Health/Safety) / ISO 14001 (Environment) / ISO 22000 (Food Safety).  
Our food-grade phosphates are allergen-free, GMO-free and BSE-/TSE-free.



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Visit the group website for more information  
[www.prayon.com](http://www.prayon.com)

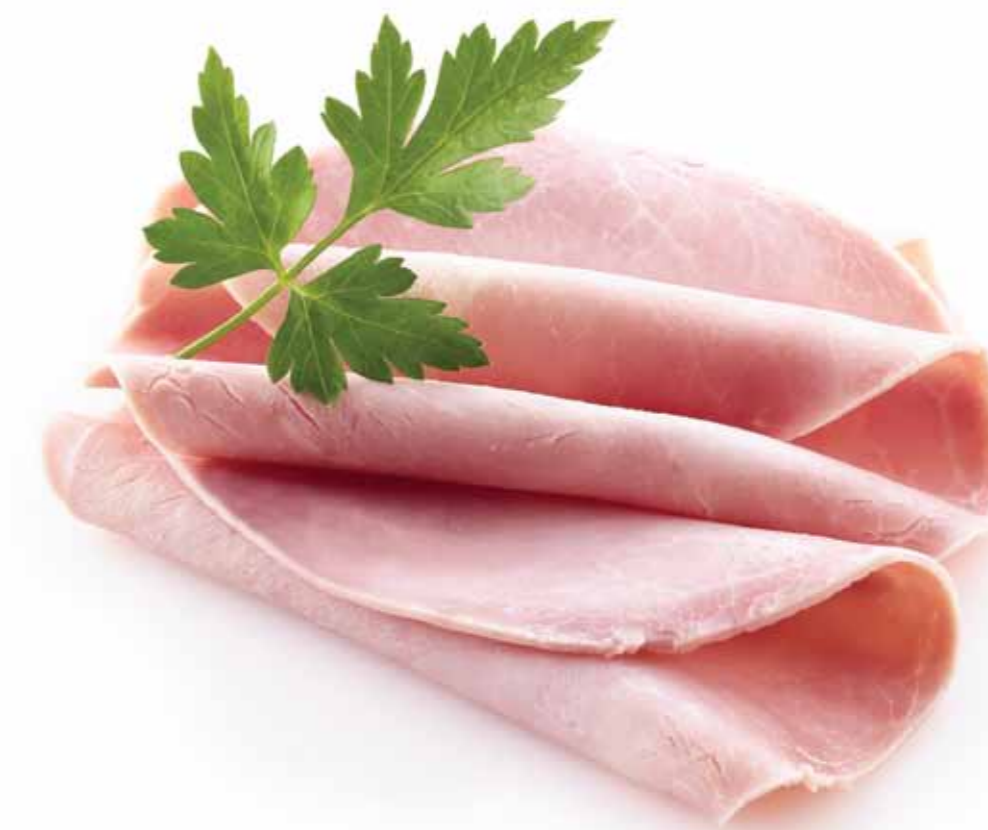
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# Phosphates

## for meat and poultry products

Carfo-sel™ blends interact in a unique way to bind water with proteins and increase meat tenderness. Treated products will maintain their juicy appearance as well as their natural nutritional properties, texture and colour.



## Prayon food phosphates for meat & poultry products

Food-grade phosphates perform a number of functions in processed meat and poultry products. Pyrophosphates (TSPP and SAPP) are the most rapidly acting phosphates on myofibrillar proteins, the water binding proteins of meat and poultry. Pyrophosphates are not highly soluble in water so they are usually blended with more soluble long-chain phosphates, such as sodium tripolyphosphate (STPP), which is then hydrolysed by alkaline phosphatases in the meat to the active pyrophosphate form.

For broader spectrum activity, SHMP (sodium polyphosphates glassy), a strong sequestrant of metal ions, may be blended with STPP. SHMP will bind calcium and magnesium, the minerals that harden water, and so soften the water. By binding iron, which may accelerate the oxidation of fatty acids, SHMP helps to prevent the development of off-flavour and protects natural color.

The pH will also impact phosphate performance and functionality. SAPP is rarely used alone since it is an acidic phosphate and lowers the meat pH closer to its isoelectric point, which leads to protein dehydration and discoloration. STPP (sodium tripolyphosphate) is widely used and will increase the pH. Products with reduced sodium content may contain potassium pyro and/or tripolyphosphate. The high-performance Carfoesel™ range has been developed for meat, poultry and seafood products.

### Injected and marinated meat and poultry



When the meat cuts are injected and tumbled for uniform brine dispersion, the alkaline phosphates raise the pH and work with salt to increase the ionic strength, which favours protein solubilisation and water absorption. As protein becomes soluble, it develops a natural tackiness that binds the meat pieces. Useful in formed products such as boneless hams, chicken rolls and turkey rolls.

Phosphates have also been shown to increase the temperature for denaturation, thus reducing cook-cool loss and leading to an end product with greater succulence and enhanced yield. In the finished product, phosphates will compensate for the oxidative influence of salt, bind iron to inhibit the development of warmed-over flavour and protect colour.

Frozen meat and poultry products also benefit from the presence of phosphates, which have a cryoprotective effect on the protein and protect against the development of rancid flavours. Additionally, the phosphates assist the protein by binding water and minimising thaw-drip losses.

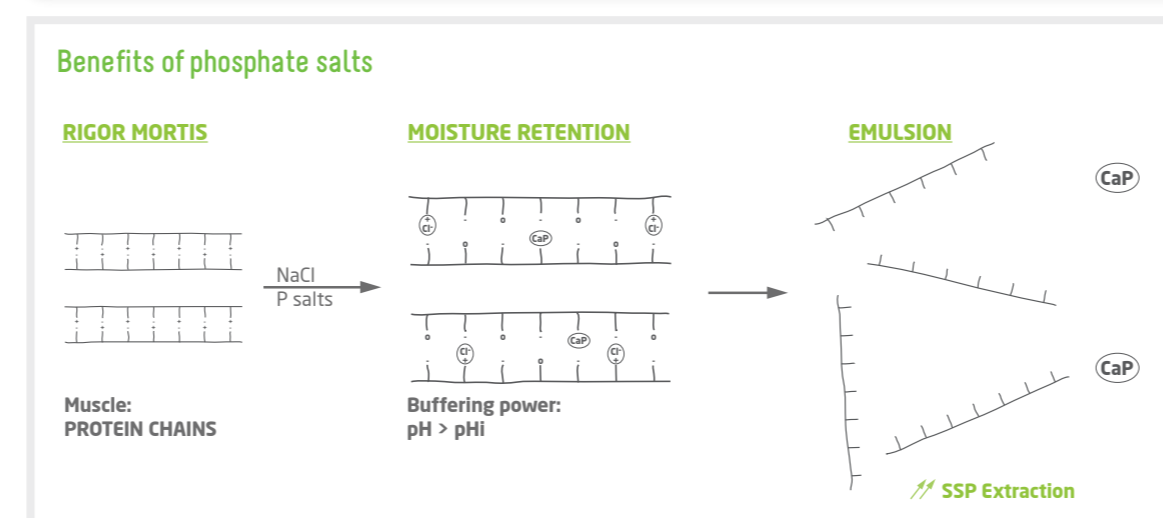
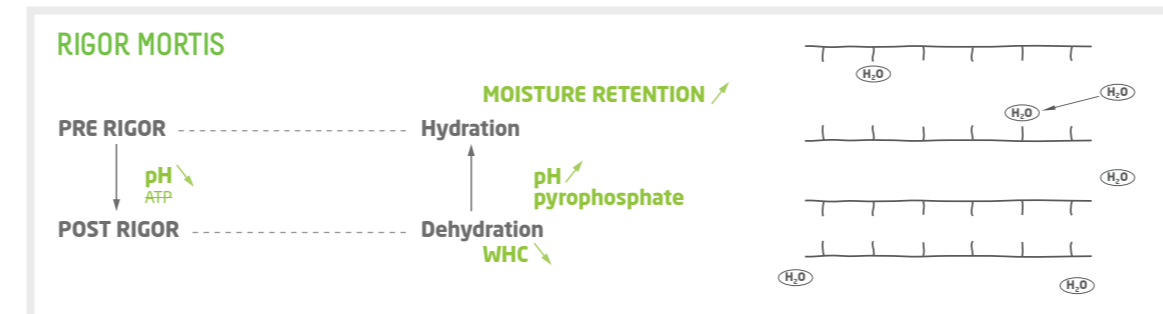
### Emulsified meat and poultry products



In comminuted meat production, phosphates, salt and ice are added to the ground meat and physically mixed for dispersion and protein solubilisation. The hydrated protein wraps around the cold fat droplets to form an emulsion. Cure colour may be accelerated by using a phosphate with a near neutral pH, such as Carfoesel™ 700. The presence of phosphate stabilises the emulsion during smoking and results in enhanced yield.

## Effects on muscle proteins

Meat and poultry change after slaughter. The animal cell's own phosphate compound (ATP - adenosine triphosphate) quickly decomposes. As a result, pH decreases, muscles contract (rigor mortis) and water is expelled. Prayon's phosphates demonstrate comparable characteristics to the cell's own phosphate. They act on muscles and restore uncontracted state, thereby enabling constitutive water to be retained.



## Food phosphates for meat & poultry

### STPP Range

Prayon has a wide range of spray-dried STPPs with various particle size distributions, bulk densities and hydration levels. There is always a Prayon STPP to fit your specific processing needs and requirements.

### Carfoesel™ Blends

Prayon has developed a full range of blended phosphates designed for the meat, fish and seafood industries. Carfoesel™ optimises yields, controls texture and enhances cured colour development. Prayon also offers Carfoesel™ blends to meet customers' specific needs.

### Carfoesel™ Instant

Carfoesel™ Instant outperforms equivalent physical blends in terms of solubility and dissolving speed. These properties are particularly useful in extreme conditions. For example, Carfoesel™ Instant salts even dissolve very well in freezing brines with a very high salt concentration. Under standard conditions, Carfoesel™ Instant products help to guarantee optimal brine homogeneity and stable processing conditions.

### Injected and marinated meat and poultry (Ham, marinated meat & poultry, frozen chicken and turkey, etc.)

#### Improve moisture retention

- Reduce cook-cool loss;
- Reduce purge during retail and distribution;
- Reduce thaw drip loss.

#### Improve texture development

- Bind meat pieces : Ensure the integrity of restructured products;
- Maintain natural juices and added flavours, protect colour and inhibit onset of rancidity.

Ranked by increased functionality:

CARFOSEL™	ENUMBERS	Properties and Applications
CARFOSEL™ 996	E 451	STPP Granular. Excellent rate of dissolution, handling properties, flowability.
CARFOSEL™ 999	E 451	Fine granular, recommended for producers of blends. Keep its dissolution speed even after blending. Good salt tolerance.
CARFOSEL™ 900/Genius	E 451, E 450	Wet and dry processes. Recommended for producers of blends.
CARFOSEL™ 1000 i	E 451	High moisture retention & texture development.
CARFOSEL™ B-940	E 451, E 452	Multifunctional. Stabilise brine, preserve appearance and taste of final product.
CARFOSEL™ 950 i	E 451, E 450	Advantages of Na-phosphates with a reduced sodium content in the finished product.

### Emulsified meat and poultry products (Luncheon meat, frankfurters, precooked sausages, chicken nuggets, etc.)

Mainly texture development:

- Solubilise the proteins responsible for emulsion development and stabilise the emulsion;
- Adapt the viscosity of raw paste;
- Bind meat pieces in restructured rolls.

CARFOSEL™	ENUMBERS	Properties and Applications
CARFOSEL™ 900	E 451, E 450	Wet and dry processes.
CARFOSEL™ 700	E 450	Provide strong firmness in final product and a rapid colour development.
CARFOSEL™ 885N	E 450, E 451	Provide high yield and strong texture development.
CARFOSEL™ 2	E 450, E 452	Provide high viscosity in raw pastes, good texture development in final product.

Other Carfoesel products are available. For details about our complete range, please contact us at [sales2services@prayon.be](mailto:sales2services@prayon.be)