



PETER GREVEN Your partner for food/feed, pharma & cosmetic additives (FPC)



PETER 
GREVEN
Your partner for oleochemicals



LIGAFOOD®

Metallic Soaps

LIGAFEED®

Metallic Soaps

PALMSTAR® Metallic Soaps & Alkaline Soaps

PETER GREVEN Your partner for food/feed, pharma & cosmetic additives (FPC)

Sustainability and the demand for renewable raw materials are becoming more and more important in many areas. As a middle-sized family owned company we have always produced additives based on renewable raw materials and can look back to a long experience with these raw materials and associated production technologies. This is the basis for the continuous development of new products and customized solutions for various applications.

Our products for the food, feed, pharma and cosmetic industry are produced at our production facility in Venlo (NL). Since many years this site is consequently in line with the requirements of the industries named above:

- Production under GMP conditions
- Production in accordance to HACCP standards
- Kosher and Halal certified
- Meet all major pharmacopeias (e.g. Ph.Eur, USP/NF, JP)
- Meet FDA guidelines for direct food contact (GRAS)
- Compliant with the latest FCC (Food Chemical Codex)
- FSSC 22000 (ISO 22000) certificate
- GMP+B2 certification
- RSPO certified



LIGAFOOD® High Quality Additives for Food

FOOD

Oleochemical additives are part of our daily lives – but we are often not aware that these additives are essential auxiliaries used in the food and nutraceutical industry. The food industry has special needs and requirements regarding the use of additives.

Therefore our brand **LIGAFOOD®** offers products, which have been developed according to the food requirements.

In 2010, Peter Greven became the first stearate producer to implement a Food Safety Management System and be awarded **FSSC 22000 (ISO 22000)**. Our products are qualified for food industry applications and registered in the following sections according to the directive for food additives:

E 470a: sodium, potassium and calcium salts of fatty acids

E 470b: magnesium salts of fatty acids

Our **LIGAFOOD®** products are

- manufactured according to HACCP food safety standards
- comply with the FDA regulations for direct food contact (GRAS)
- compliant with the latest Food Chemical Codex (FCC)
- based on vegetable, renewable raw materials
- free from impurities (e.g. dioxins, pesticides and heavy metals)

and can be used as

- flowability agent
- anti-caking agent
- lubricant
- separating agent
- coating agent
- foaming agent
- emulsifier
- water repellent



FSSC 22000



Products based on certified sustainable palm oil

As sustainability and the responsible use of natural resources have always been fundamental aspects of our corporate philosophy we offer different products based on sustainable, RSPO certified fatty acids to support the sustainable palm oil production.

The Roundtable on Sustainable Palm Oil (RSPO), which was founded in 2004, is a non-profit association. It unites stakeholders from seven sectors of the palm oil industry in order to develop and to introduce global standards for sustainable palm oil.

Peter Greven became an official member of the RSPO in 2010. As soon as RSPO Mass Balance (MB) certified fatty acid became available on the market, we started all the internal preparations and processes in order to conclude the RSPO SCCS (Supply Chain Certification System) certification. In September 2013 Peter Greven

became the first metal soap producer to receive the RSPO SCCS certificate which officially acknowledged the production and distribution of vegetable stearates and dispersions based on RSPO Mass Balance (MB) certified fatty acid.

In 2016 the existing certification could be extended by RSPO Segregated (SG) which is the next higher certification level. As a consequence, RSPO SG certified products were added to our portfolio.

In 2018 we decided to go one more step towards sustainable and certified products: We shifted our **LIGAFOOD®** product range from conventional to RSPO Mass Balance (MB) certified fatty acid. Therefore, all **LIGAFOOD®** products are only available as certified grades.



RSPO-1106171

RSPO Mass Balance



RSPO-1106171

RSPO Segregated

LIGAFOOD MF-2-K-MB

This precipitated Magnesium Stearate (E 470b) is based on RSPO Mass Balance (MB) certified fatty acid and is Kosher and Halal certified. Due to its fine particles (average particle size D50: 7–11 µm) and its high specific surface area of 6–12 m²/g it is very popular in the food industry. It is used as a lubricant for tableting candies or dragees and as a foaming agent or emulsifier in rusks and baking powder. Furthermore it improves the flowability of powdered foods (e.g. spices and herbs) and extends their shelf life because of its hydrophobic properties. Due to the specific precipitated production process and the resulting high specific surface area, our LIGAFOOD MF-2-K-MB is very efficient.

LIGAFOOD MF-2-K-SG

LIGAFOOD MF-2-K-SG offers the same properties as LIGAFOOD MF-2-K-MB but is based on RSPO Segregated (SG) certified fatty acid.

LIGAFOOD MGV-MB

Our direct processed Magnesium Stearate is based on a vegetable fatty acid and can be used as a lubricant for tableting candies and dragees and as a foaming agent or emulsifier in rusks and baking powder. It improves the flowability of powdered foods (e.g. spices and herbs) and extends their shelf life because of its hydrophobic properties. LIGAFOOD MGV-MB is Kosher and Halal certified and is based on RSPO Mass Balance (MB) certified fatty acid.

LIGAFOOD MF-3-K-MB

This special product is characterised by the same unique properties as LIGAFOOD MF-2-K-MB but offers a higher specific surface area of 8–12 m²/g and a smaller median particle size (median particle size D50: 5–9 µm). This product is preferred in applications where processing conditions are more critical and very fine ingredients or mixtures are used. It is Kosher and Halal certified and is based on RSPO Mass Balance (MB) certified fatty acid.





LIGAFOOD CPR-2-K-MB

Due to its high specific surface area of 5–9 m²/g and its fine particles (average particle size D50: 5–9 µm) this precipitated Calcium Stearate (E 470a) offers excellent conditions as a lubricant for tableting hard candies and dragees. Furthermore, it is widely used as an anti-caking agent, carrier and hydrophobic agent due to its water-repellent characteristics. Same as our LIGAFOOD MF-2-K-MB this product is produced by a specific precipitated production process resulting in a high specific surface area and is therefore very efficient. It is Kosher and Halal certified and is based on RSPO Mass Balance (MB) certified fatty acid.

LIGAFOOD CPR-2-K-SG

LIGAFOOD CPR-2-K-SG offers the same properties as LIGAFOOD CPR-2-K-MB but is based on RSPO Segregated (SG) certified fatty acid.

LIGAFOOD CAV-MB

LIGAFOOD CAV-MB is based on vegetable fatty acid and can be used as lubricant for tableting candies and hard candies. Furthermore, it is widely used as an anti-caking agent, carrier and hydrophobic agent due to its water-repellent characteristics. In addition, LIGAFOOD CAV-MB is Kosher and Halal certified and is based on RSPO Mass Balance (MB) certified fatty acid.

PALMSTAR NAV

Our Sodium Stearate is used as a coating agent, emulsifier, release and gelling agent and is indispensable in the food industry. It is used in chewing gum bases, in baker's shortening and as an aid in the preparation of fat free and starch free corn syrups with a low dextrose content.

PALMSTAR NAV-MB / PALMSTAR NAV-SG / PALMSTAR NAV-ND-SG

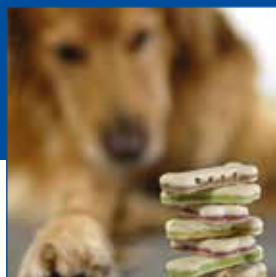
Those products offer the same properties as PALMSTAR NAV but PALMSTAR NAV-MB is based on RSPO Mass Balance (MB) and PALMSTAR NAV-SG on RSPO Segregated (SG) certified fatty acid. PALMSTAR NAV-ND-SG is a dust free variation of PALMSTAR NAV-SG.

PALMSTAR KAV

Our Potassium Stearate offers the same properties as our PALMSTAR NAV and is preferred as an alternative in formulations where a low sodium content is required.

PALMSTAR KAV-MB / PALMSTAR KAV-SG

Those products offer the same properties as PALMSTAR KAV but PALMSTAR KAV-MB is based on RSPO Mass Balance (MB) and PALMSTAR KAV-SG on RSPO Segregated (SG) certified fatty acid.



LIGAFEED[®] Special Additives for Feed

FEED

Regulations of the feed industry are often stricter than the ones of the food industry. Additives, which are used in the feed industry, don't only have to meet the food regulations but also need to comply with the feed regulations. **Calcium, Magnesium, Sodium and Potassium Stearates can be used as feed materials according to the EU feed directive.** To comply with the high requirements of the feed industry we introduced a special product line with the brand name **LIGAFEED[®]**.

Our LIGAFEED[®] products

- were developed especially for the use in feed industry,
- are produced with purely vegetable raw materials,
- are free from impurities (e.g. dioxins, pesticides and heavy metals),
- meet the requirements of the (animal) feed industry,
- are produced, analysed and stored according to GMP+B2 (2010),
- can be used as alternative for silicone bonded products,
- improve the shelf life of feed products.

In addition to our existing certifications (FSSC / ISO 22000, Kosher, Halal, RSPO), we successfully completed the **GMP+** certification for the animal feed industry in 2013. GMP stands for Good Manufacturing Practice. In 1992 this was the origin of the **GMP+** Feed Certification Scheme. Through integration of requirements regarding the quality management according to ISO, HACCP and other parts it was developed to an adequate certification system. The + stands for the integration of HACCP: Hazard Analysis & Critical Control Points. In 1992 this was the origin of the GMP+ Feed Certification Scheme.

Calcium, Magnesium, Sodium and Potassium Stearates are registered according to the EU feed directive and therefore can be used as feed materials. Within the feed industry our stearates are used as

- anti-caking agent
- flowability agent
- carrier
- water-repellent
- release agent
- coating agent
- emulsifier
- gelling agent



GMP+B2



LIGAFEED CAV

Our direct processed Calcium Stearate (E 470a) is used as a flowability agent and carrier. Its hydrophobic properties improve stability and flowability of animal feed. It is Kosher and Halal certified.

LIGAFEED MGV

Our Magnesium Stearate is mainly used as carrier and flowability agent. Through its hydrophobic properties, stability and flowability of animal feed is improved. It is Kosher and Halal certified.

LIGAFEED NAV-E

Our LIGAFEED NAV-E is an important ingredient used in many feed premixes for its coating and anti-caking properties with powdered blends and as an emulsifier and gelling agent in liquid blends.

Fig. 1: Impact of Calcium Stearate on prevention of agglomeration

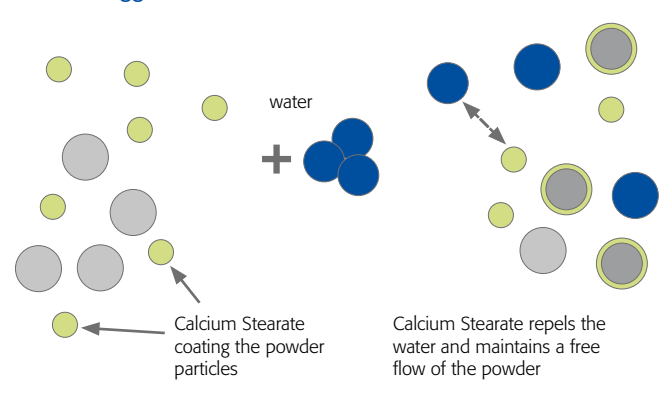


Fig. 2: Impact of Calcium Stearate regarding agglutination

Moisture, mainly in the form of humidity, can wet the surface of the particles in a dry mix or upon storage. Without anti-caking agents the particles will fuse in a hard mass. This has a negative impact on performance, stability and appearance as well as on processing.



PHARMA

Oleochemical additives are among the most important and extensively used excipients in the pharmaceutical industry. Peter Greven began addressing these high quality requirements many years ago and dedicated one plant to the production of pharmaceutical stearates with vegetable origin. Our brand name **LIGAMED®** is dedicated

to our high quality additives specifically developed for use in pharmaceutical applications. Information about our premium pharmaceutical stearate product portfolio is listed in our **LIGAMED®** brochure. Supplementary to our high quality pharmaceutical product line **LIGAMED®** we also offer the following **PALMSTAR®** products:

PALMSTAR MF-1-V

Our direct processed Magnesium Stearate is manufactured from vegetable fatty acids and is used as a lubricant and flowability agent for manufacturing pharmaceutical, nutraceutical and dietary supplement tablets. **PALMSTAR MF-1-V** is manufactured in accordance with Ph.Eur and USP/NF requirements.

PALMSTAR ZPR-2-V

PALMSTAR ZPR-2-V is suitable for pharmaceutical applications. It is used as an alternative lubricant if Magnesium and Calcium Stearate are incompatible with the API.

PALMSTAR AL PHARMA

PALMSTAR AL PHARMA is one of our Aluminium Stearates with the best gelling performance capabilities. It is very suitable as an emulsion stabilizer and viscosity increasing agent for creams and ointments. Additionally, pharmaceutical applications use it as an anti-caking agent or suspending agent. **PALMSTAR AL PHARMA** is in accordance with the European Pharmacopeia.



COSMETICS

Soaps are the oldest, historically documented cosmetic products. For example the cuneiforms of the ancient Babylonians show references to formulations for the manufacture of soaps for body cleansing.

Today surfactants have often taken over the function of soaps as a detergent. Nevertheless natural soaps and metallic soaps can be found in many cosmetic products.

The following products are manufactured using vegetable origin raw materials and are INCI listed and approved for cosmetic applications.

PALMSTAR ZPR-2-V

Our Zinc Stearate is used in the cosmetic industry as a colorant and anti-caking agent. It is mainly used in creams and ointments and in make-up – powders, mascara, eye shadow – for its water repellent and protective agent characteristics. Furthermore, zinc offers the advantage of exhibiting an antibacterial effect, especially in ointments.

LIGASTAR AL DT/C-V

This Aluminium Stearate grade is specifically developed for the production of creams and ointments. The product is characterised by its moderate gel strength at a relatively low gelling temperature of 80–120 °C. This results in very stable gels with good application properties. Typical usage depends on the base oil and varies between 1 % and 4 % of the formulation.

LIGASTAR ALG-V

LIGASTAR ALG-V is a Distearate produced with vegetable fatty acids and offering the best gelling properties in the range of all Aluminium Stearate grades. It is used in ointments as thixotropic agent and viscosity modifier. It improves the flowability and the adherence to cosmetic powders and exhibits a slight astringent effect.

PALMSTAR NAV

This Sodium Stearate grade is used as an emulsifier and opacifier in the cosmetic industry. However, the largest application is the production of deodorant sticks: A solution of about 10 % of PALMSTAR NAV forms a hard, solid gel under cold conditions. Due to its particle structure and composition the performance characteristics are very suitable for this application. The crystallisation tendency of the gels can be prevented by the addition of Glycerine or Isopropylmyristate (IPM). Additionally, PALMSTAR NAV is available in a RSPO Mass Balance (MB), RSPO Segregated (SG) as well as dust free and RSPO Segregated (SG) certified grade.

PALMSTAR KAV

Our vegetable origin Potassium Stearate is used in the cosmetic industry mainly as an emulsifier, surfactant and cleansing agent. Additionally, PALMSTAR KAV is available in a RSPO Mass Balance (MB) and RSPO Segregated (SG) certified grade.



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