# PLASMA POWDER

WHERE **WORLDS** MEET

## CONCENTRATED, NUTRITIONAL AND PALATABLE BINDER

Plasma powder is a very palatable protein source designed to add value to wet pet food, kibbles, as well as snacks and treats. It aids formulators with protein enrichment and reformulation goals. Plasma powder helps to increase the quality of each formula by ensuring uniform desired texture. It ensures juiciness, elasticity and softness of chunks and pate. It provides proper binding in extrudates when reducing the inclusion of starch. Whether you want to achieve a perfect texture, add functionality or develop healthier kibbles we are committed to help you with optimizing formulations to accomplish the best results.

Natural Ingredients. Smart Solutions.

sonac

DARLING INGREDIENTS

## EFFICIENT NUTRITIOUS AND TASTY BINDER

Plasma powder is an excellent option for improving texture of extrudates, chunks and pate as well as a high-quality animal protein source. It contains more than 70% protein, less than 2.5% fat and 2% minerals. It is a fully digestible ingredient characterized by low calorific value (<4 kcal/g).
The protein has a good amino acid composition, which is particularly rich in leucine, lysine and arginine. Plasma protein powder is a high-quality protein-based binder that supports healthy nutrition and improves palatability. It is suitable for all kinds of pet food formulas, snacks and treats.

## JUICY AND SOFT TEXTURE OF WET PET FOOD

Plasma protein powder is used to produce quality chunks and pate. It effectively binds all small particles together keeping water and fat in the matrix. This provides uniform product with juicy, elastic and soft texture appreciated with every bite by the sensitive palates of our cats and dogs. A positive aspect is that the gelling and water binding properties find more expression at higher temperatures. High gel strength capacities are obtained at temperatures above 90 °C, with a peak strength at 121 °C. This suits the nature of sterilized products.
Desired texture and product stability are commonly achieved at a very small dosage of plasma protein powder (0.5-2%).

## IMPROVES KIBBLE TEXTURE AND PALATABILITY

The addition of plasma protein in dry pet food and semi-moist snacks & treats extrudates improves their quality.
It provides good binding and durability in low starch formulas while reducing hardness.

## ORGIN OF PLASMA POWDER

Porcine, bovine or ovine blood used to produce Plasma Powder is obtained from certified slaughterhouses from healthy animals approved for consumption. Blood is hygienically collected. It is kept in liquid state by adding anticoagulants and refrigerated until processing. Red blood cells and plasma are separated by centrifugation. The red blood cell fraction is used to produce food colorants. The liquid plasma is concentrated and carefully spray-dried to preserve all the functional properties of the liquid plasma (e.g. binding, gelling, emulsifying) and palatability.

## KEY BENEFITS OF PLASMA POWDER

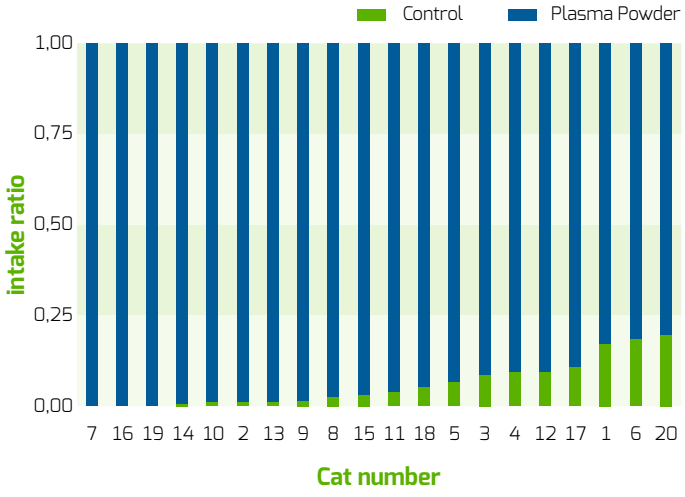
- Improves texture of extrudates
- Used as a starch replacer and binder in dry pet food
- Provides heat stable emulsification
- Ensures juicy, elastic and soft texture of pate and chunks
- Enhances palatability
- Enriches formula in nutritious and highly digestible protein
- Natural ingredient – clean labeling

## PLASMA MODE OF ACTION

The techno-functional properties of plasma powder are due to high levels of albumins, which make up to 60% of its total protein. When plasma albumins are heated the denaturation is faster than aggregation. This allows the unfolded proteins to arrange themselves and form an irreversible, homogeneous, very elastic and stable gel. Plasma gels give texture and consistency, improve water holding capacity, retain nutrients, taste and limit fat losses. Plasma powder also has excellent emulsifying and foaming properties.

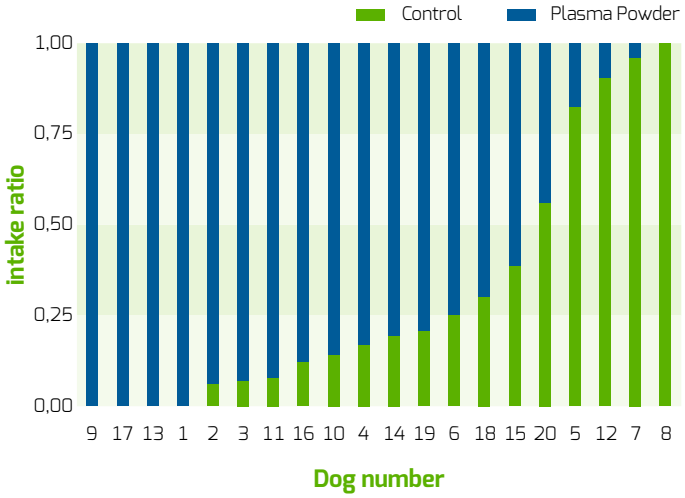
## PLASMA POWDER IS HIGHLY PALATABLE TO CATS

- There is a 18 to 1 intake ratio of Sonac Plasma Powder to Control.
- Cats prefer kibbles coated with 2% of plasma powder diluted in fat then those coated only with fat.




## PLASMA POWDER IS HIGHLY PALATABLE TO DOGS

- There is a 2 to 1 intake ratio of Sonac Plasma Powder to Control.
- Dogs prefer kibbles coated with 2% of plasma powder diluted in fat then those coated only with fat.




## PLASMA POWDER VS. OTHER BINDERS

Alginates, wheat starch, carrageenan, and guar-gum are often used in wet pet food formulas to improve binding and emulsifying. When comparing those ingredients with plasma protein powder (Table 1), we can see the superior characteristics of plasma protein.

**Table 1: Comparison of Plasma Powder protein with other binders**

| | Plasma protein | Wheat gluten | Carra-geenan | Guar-gum | Alginate | Egg-Albumin |
|---|---|---|---|---|---|---|
| **Origin** | Animal | *Veg | *Veg | *Veg | *Veg | Amimal |
| **GMO free** | Yes | At choice | Yes | Yes | Yes | Yes |
| **Solubility** | +++ | + | +(+) | ++ | + | +++ |
| **Gel formation** | +++ | ++ | ++ | ++ | +++ | +++ |
| **Water binding** | ++ | ++ | +++ | +++ | + | ++ |
| **Emulusifying properties** | +++ | ++ | - | + | + | ++ |
| **Palatability** | +++ | - | 0 | 0 | 0 | + |

*vegetable

WHERE WORLDS MEET

## WHERE WORLDS MEET

Where worlds meet is offered you by Sonac Pet Foods, a leading producer of reliable, sustainable ingredients for pet food and other industries worldwide, with representation on 4 continents and activities in 60 different locations. Operating on a unique residuals-to-resources concept, we process raw materials of animal origin, and develop proteins, minerals, fats, gelatins and numerous other functional ingredients. As a dependable one-stop shop for smart, volume-driven, ingredient solutions.
Our constant aim is to help manufacturers improve recipes and reach the highest levels of quality and environmental performance.

## PART OF DARLING INGREDIENTS

Sonac is part of Darling Ingredients, the world's largest producer of sustainable natural ingredients from edible & inedible organic residuals and a respected global leader in repurposing. Our goal: to create sustainable food, feed and fuel ingredients for a growing population.

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