



## Hemp Hydrolysate

### PRODUCT DESCRIPTION

The Hemp Hydrolysates belongs to the Hydrolyzed Vegetal Protein (HVP) group of products of Costantino Food and Beverage Hydrolysates production. HVP families have been developed by Costantino along the years to optimize the use of the vegetal proteins in multiple food applications. This group of product can deliver both nutritional functions and simultaneously technical properties. Purity and clarity of the products are the result of a continuous improvement in the selection and optimization of the best supply chain and a stable and capable process.

Hemp Hydrolysates is the result of the skill of Costantino in the selection of the best-optimized hemp flour source in combination with an hydrolysis able to deliver the optimized performance in term of structure and, thanks to its balanced composition, allow nutritional contribution to the food and beverage formulations. The Hemp Hydrolysate can be filtered and concentrated before spray drying to obtain the best clarity and purified product for technical applications. Hemp Hydrolysate is rich in essential amino acids and essential fat acids omega 6, omega 9 and omega 3; moreover, it is one of the few vegetal sources of gamma-linolenic acid. It is therefore particularly efficient when a complete and balanced source of those nutritional factors are required. As many Costantino products customization of this product is available for eventual fine tuning of the chemical properties to fit the customers optimal needs.

### SUGGESTED USE

Hemp is one of the most promising vegetal protein in the food industry in different applications, thanks to its peculiar and balanced nutritional composition (essential amino acids and fat acids, among others) and low level of enzymatic inhibitors (compared to soybean flour). We recommend it in bakery for its technical properties as smoothing and whipping agent. Generally usable in every formulation to replace nutritional content from animal origin or from soybean origin.

### STORAGE & SHELF LIFE

Protein hydrolysates are hygroscopic and can absorb odors. Temperatures below 30°C, relative humidity below 65%, and odor free environment are recommended.

Avoid direct sunlight.

Expiry date: 2 years from the date of manufacture in the original sealed packaging kept in a dry area, ideally between 8 and 30°C.

### PACKAGING

The standard packaging is a 25 kg cardboard box, which contains the product within an inner polyethylene liner bag. No staples or metallic fasteners are used:

- Custom packaging available.
- Delivered with Certificate of Analysis.

The information contained herein is based on internal testing performed at A.Costantino & C. S.p.A. and is to the best of our knowledge true and accurate at present time. All data represents typical analyses provided as a general guide and not to be taken for exact specifications. No warranty nor any liability, implied or otherwise, is assumed with them. Users are directed to perform their tests to determine suitability and performance for specific purposes.

The information and results contained in this technical data sheet are susceptible to modification at any time, without warning.

### TYPICAL PHYSICAL & CHEMICAL PROFILE

Color	Brownish
Taste	Typical
Total Nitrogen on DM	>9.6% w/w
Proteins on DM (TN x 6.25)	≥60%
Ashes	≤15%
pH (2% sol.)	5.0-7.0
Texture	Powder

### AVAILABLE ON REQUEST

MICROBIOLOGICAL ANALYSIS	
Total Bacterial Count	<i>Salmonella</i> spp
Bile-tolerant Gram-negative Bacteria	<i>S.aureus</i>
<i>E. coli</i>	Yeasts and Moulds
AMINOACID PROFILE	
HYDROLYSIS PROFILE	
Molecular Weights distribution	Average MW
Degree of hydrolysis	
OTHER ANALYSIS	
Heavy Metals	Allergens
Carbohydrates	Fat
Salts and Ashes	Solubility

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Examples of Costantino Food and Beverage Product Applications (available)

APPLICATION	PROTEINS USED	FUNCTIONAL USE	QUANTITY USED	EXAMPLE	CLAIM
Breakfast Cereals	Pea and Rice Hydrolyzed and whole blend	Add nutritional content	Add up to 8% to the original recipe		High Protein
Bread and Grissini	Rice Hydrolyzed and whole blend	High protein products for diet support	Add Up to 25% to reach more than 30% of total protein level.		High Protein
Sport Drink	Rice Hydrolyzed	Add nutritional content	Add up to 8% to the original recipe		High Protein
Biscuits and Cookies	Pea protein hydrolyzed and whole blend	Increase Nutritional level Organic Label	Add up to 8% to the original recipe		High Protein Improve Texture
Vegetal Burgers	Soy, Pea and Rice Hydrolyzed and whole blend	Water retention, ad nutritional content, savory	% added to the recipe depending on the application		Vegan High Protein
Pizza dough	Pea, Rice and Wheat Hydrolyzed and whole blend	Structure of the dough, crispy and softening effects	Add up to 5-8% to the original recipe		Improve texture
Vegetal and Vegan soups	Soy, Pea and Rice Hydrolyzed and whole blend	Water retention, ad nutritional content, savory	% added to the recipe depending on the application		Vegan High Protein
Vegan Torraine	Pea and Rice Hydrolyzed blend	Egg protein replacement for vegan market	Add up to 3-5% to the original recipe		Vegan

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### Examples of Costantino Food and Beverage Product Applications (under development)

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