PROPERTIES:

- Great taste and low bitterness
- Easy to dissolve
- Easy to work into shake applications and RTDs
- No Astringency
- High amounts of protein can be added
- Extensively hydrolysed whey protein with a high content of di- and tri peptides

CHEMICAL SPECIFICATIONS	Unit	Specification		Typical value	Frequency of analysis	Analytical method
		Min.	*Max.*			
Protein as is (Nx6.38)	%	79.0	88.0	83.0	Each batch	ISO 8968-3 / IDF 20-3
Protein in dm (Nx6.38)	%	84			Calculated	
Lactose	%		0.2	0.1	Each batch	ISO 5765-2 / IDF 79-2
Fat	%		0.5	0.3	Each batch	ISO 1736
Ash	%		8.0	6.4	Each batch	ISO 5545 / IDF 90:2008
Moisture	%		5.5	4.9	Each batch	ISO 6731
Nitrate (NO3-)	ppm		50		Each batch	ISO 14673-2 / IDF 189-2
Nitrite (NO2-)	ppm		5.0		Monitoring	ISO 14673-2 / IDF 189-2

MINERALS	Unit	Typical value	Frequency of analysis	Analytical method
Sodium (Na)	%	1.595	Monitoring	AFI ICP analysis
Magnesium (Mg)	%	0.011	Monitoring	AFI ICP analysis
Phosphorus (P)	%	0.192	Monitoring	AFI ICP analysis
Chloride (Cl)	%	0.13	Monitoring	ISO 5943 / IDF88
Potassium (K)	%	2.447	Monitoring	AFI ICP analysis
Calcium (Ca)	%	0.072	Monitoring	AFI ICP analysis

PHYSICAL SPECIFICATIONS	Unit	Specification Min.	Specification Max.	Typical value	Frequency of analysis	Analytical method
pH	10% sol	7.6	8.2	7.8	Each batch	ISO 5546 / IDF 115
Scorched particles	Disc	A			Each batch	ADPI
Bulk density (625x)	g/cm3	0.30	0.70		Monitoring	ISO 8967 / IDF 134
Solubility index	ml		1.0		Monitoring	ISO 8156 / IDF 129
Colour	Description	White to cream				Sensory inspection
Flavour/odour	Description	No off flavour or odour				Sensory inspection
Texture	Description	Homogenious				Sensory inspection

MICROBIOLOGICAL SPECIFICATIONS	Unit	Specification n	Specification Max.	Frequency of analysis	Analytical method
Total plate count (30°)	CFU/g	5	<10,000	Each batch	ISO 4833-1
Total plate count (55°)	CFU/g	5	<1,000	Each batch	ISO 4833-1: Incubation at 55 °C 48 hrs
Enterobacteriaceae	CFU/g	5	<10	Each batch	ISO 21528-2
Bacillus cereus	CFU/g	5	<100	Each batch	ISO 7932
Sulph. Red. Clostridia	CFU/g	5	<100	Each batch	ISO 15213
Yeast & mould	CFU/g	5	<50	Each batch	ISO 6611
	Sample size	*n*	**Absent in**		
Staphylococcus aureus	0.2 g	5	1 g	Each batch	ISO 6888-1
Salmonella	25 g	5	125 g	Each batch	ISO 6579
Listeria monocytogenes	25 g	1	25 g	Monitoring	ISO 11290

NUTRITIONAL VALUES

VALUES PR 100 G PRODUCT

Energy	1,399 / 329	kJ/Kcal
Calories from fat	2	Kcal
Protein (Nx6.25)	81.7	g
Carbohydrate	0.1	g
- of which dietary fiber	0	g
- of which sugars	0.1	g
- of which added sugars	n.a.	g
Fat	0.2	g
- of which saturated fat	0.1	g
- of which trans fat	0	g
Cholesterol	n.a.	
Salt	4.0	g
Sodium	1.6	g
Vitamin A	n.a.	
Vitamin C	n.a.	
Calcium	0.08	g
Iron	n.a.	

EU: Energy value is calculated according to Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers.

ALLERGENS

YES	NO	ALLERGENS	DESCRIPTION OF COMPONENTS
	•	Cereals containing gluten and products thereof	
	•	Crustaceans and products thereof	
	•	Eggs and products thereof	
	•	Fish and products thereof	
	•	Peanuts and products thereof	
	•	Soya beans and products thereof	
•		Milk and products thereof (including lactose)	Bovine milk
	•	Nuts	
	•	(Tree) Nuts and products thereof	
	•	Celery and products thereof	
	•	Mustard and products thereof	
	•	Sesame seeds and products thereof	
	•	Sulphur dioxide and sulphites (>10 mg/kg)	
	•	Lupin and products thereof	
	•	Molluscs and products thereof	

AMINO ACIDS (TYPICAL)

STORAGE:

TYPICAL AMINO ACID COMPOSITION G. AA/100 G PROTEIN		
Alanine		5.9
Arginine		2.1
Aspartic acid (asparagine)		11.1
Cysteine (Cystine)		2.3
Glutamic acid (glutamine)		19.8
Glycine		1.6
Histidine	*	1.7
Isoleucine	*	7.0
Leucine	*	11.5
Lysine	*	10.2
Methionine	*	2.5
Phenylalanine	*	3.1
Proline		6.5
Serine		5.0
Threonine	*	7.7
Tryptophane	*	1.9
Tyrosine		2.9
Valine	*	6.3

* Essential amino acids

PEPTIDE DISTRIBUTION (TYPICAL)	
Mw (Dalton)	Weight
< 175	
< 375	≈14.2 %
375 - 750	≈24.4 %
750 - 1250	≈19.5 %
1,250 - 2,500	≈27.8 %
> 2,500	≈14.0 %

MOLECULAR DISTRIBUTIONS	Unit	Specification	
		Min.	*Max.*
Degree of hydrolysis	%	21	27
Mw, mean molecular weight - based on weight at 214 nm		1000	1950
Mn, Average molecular weight - based on weight at 214 nm		450	700

LEGAL REFERENCES:

The product is manufactured, packaged and labelled according to the relevant EU-regulations for food and food ingredients, and/or FAO/ WHO Codex Alimentarius where applicable. This includes that the milk/milk constituents used as raw material originate from healthy cows. The milk used in the production is included in monitoring programmes for undesirable substances as required by regulations or HACCP-based risk assessment. The production plant is approved by the competent authorities and included in the EU register of approved food establishments.

Products manufactured outside EU complies with relevant regulations in the country where the product is produced.

REFERENCES:

1. Kerr 2018, manuscript under submission
2. King DG, et al. Am J Clin Nutr. 2018;107(4):550-557.
3. Morifuji M, et al. J Agric food Chem. 2010,58(15):8788-8797.
4. Nakayama et al. Nutrients. 2018;10(4).
5. Lollo Int Dairy J. 2014;34(1):19-24.
6. Hansen M, et al. Int J Sport Nutr Exerc Metab. 2014,25(2):97 – 109.
7. Brown MA, et al. Appl Physiol Nutr Metab. 2017:apnm-2017-0412.
8. Buckley JD, et al. J Sci Med Sport. 2010;13(1):178-181.
9. Cooke MB, et al. J Int Soc Sports Nutr. 2010;7:1-9.
10. Morifuji M, et al. Nutrition. 2011;27(7-8):833-837.
11. Based on blinded sensory evaluations