		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 1/10

## 1. PURPOSE AND SCOPE

Describe the properties and characteristics of modified milk powder (fat filled milk powder) with a 26% fat content, fortified with vitamins A and D and manufactured at the industrial plant Lácteos La Ramada S.A, located in Franck, Santa Fe Province.

## 2. DEFINITIONS

**Modified milk:** According to CAA in article N°1358, Modified Milk is milk that, subjected to special treatments or that by adding different nutritional principles or partially substituting some of them, transforms its physical properties or alters the percentage ratio of its original ingredients.

**Powdered food based on skimmed milk and vegetable fats (fat filled milk powder):** a powdered product where milk fat has been replaced by vegetable fats, with the aim of developing a product with physicochemical and microbiological characteristics similar to whole powder milk.

**Instant modified powder milk with a 26% fat content, fortified with vitamins A and D:** Modified milk powder, made from skimmed milk, where milk fat has been replaced by vegetable fats, becoming instant milk by adding soy lecithin as emulsifier and a premix of vitamins A and D as fortifiers.


## 3. RESPONSIBILITIES

Responsible Person	Actions
Head of Quality Management	<ul style="list-style-type: none"> <li>• Keep this document up to date and verify the information included</li> <li>• Inform the person responsible for Logistics and Foreign Trade of any modifications to this document.</li> </ul>
Person Responsible for Logistics and Foreign Trade	<ul style="list-style-type: none"> <li>• Distribute this document to customers.</li> <li>• Inform customers of any modification to this document.</li> </ul>

## 4. DEVELOPMENT

### 4.1 Description

It is the product obtained by the dehydration of standardized skimmed milk in fat and protein by means of technologically adequate processes; mixed with vegetable fats, with the addition of soy lecithin as emulsifier; supplemented with a premix of Vitamins A and D on fluid skimmed milk.

		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 2/10

If requested by the customer, the product can be made with Kosher or Halal religious certification.

#### 4.2 Organoleptic characteristics

Uniform powder with no lumps, yellowish white, with a characteristic aroma and flavor similar to that of powder milk, slightly sweet, non-acidic, non-spicy, not tallow and/or fats from degradation by enzymatic action.

#### 4.3 Composition

Milk selected according to CAA chapter VII GMC Resolution No. 080/94 and articles 567-567bis- and 570; fully skimmed and standardized in protein content with milk permeate obtained by ultrafiltration; vegetable fats (interesterified palm and soybean oil); soy lecithin as emulsifier, water-soluble premix of vitamins A and water-soluble premix of tocopherols as permitted antioxidant.

#### 4.4 Mode of use

This food is aimed mainly for industrial use as a substitute for powder milk. Not suitable for people with lactose intolerance, those who are allergic to any of its ingredients, or infants less than 6 months of age.

For use as a powdered ingredient or reconstituted in other proportions, the instructions of the process where it shall be used must be followed.

Use dry and clean utensils for handling.


#### 4.5 Physical contaminants

During the manufacturing process, a set of preventive measures is established to ensure that the final product is free of foreign particles.

For this reason, metal detectors and foreign particles are present in the packaging lines, whose detection limits are expressed below:

Line	Type of particle	Characteristic	Detection limit
25kg Bag	Metallic	Non-Ferrous	4.5 mm
		Ferrous	3.0 mm
		Stainless Steel	3.5 mm
Big-Bags	Metallic	Non-Ferrous	2.0 mm
		Ferrous	1.0 mm
		Stainless Steel	2.8 mm

"Once this document is downloaded or printed, it shall be considered an uncontrolled copy. Therefore, LÁCTEOS LA RAMADA is not responsible for its update"


		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 3/10

Multi-laminated film	Foreign material	Glass	2.381 mm
		Ceramic	3.175 mm
		Stainless Steel	1 mm

#### 4.6 Technical characteristics

Physicochemical characteristics		
Determined parameter	Value	Analytical method
Humidity	Max. 4.00% W/W	FIL 26: 1982
Minimum total fatty matter	Min. 26.0 % W/W	FIL 9 C:1987
Total Proteins	Min. 24.0 % W/W	FIL 20 B: 1993
Proteins in non-fatty solids	Min. 34.0 % W/W	Calculated
Ashes	Max 6.5%	FIL 89: 1979
Titrateable acidity	Max 18,00 ml of NaOH 0.1 N/10g of SNG	FIL IDF 86: 1981
pH Dissolution 1:10	6.6 – 6.8	Potentiometry
Insolubility Index	Max 0.5 ml	FIL IDF 129 A: 1988
Toasted particles	Max. Disc “B”	ADMI 916
Wettability	Max. 40 seconds	FIL 87:1979
Dispersity	Min 85 % W/W	FIL 87:1979
Apparent density	0.50 to 0.55 g/ ml at 1250 hits)	GEA-Niro Method Analytical Method A2b
Vitamin A µgr/100 gr min	1600 UI - 480 µgr retinol (20 % IDR according to CAA)	HPLC-FLD / ISO 12080-2:2009; IDF 142-2:2009
Vitamin A µgr/100 gr max	4000 UI - 1200 µgr retinol (40 % IDR according to CAA)	HPLC-FLD or ISO 120802:2009; IDF 142-2:2009
Vitamin D µgr/100 gr min	320 UI - 8 µgr calciferol (20 % IDR according to CAA)	LC-MS/MS or HPLC FIL Standard 177:2002ISO 14892.
Vitamin D µgr/100 gr max	480 UI - 16 µgr calciferol (40 % IDR according to CAA)	LC-MS/MS or HPLC FIL Standard 177:2002ISO 14892.

The minimum and maximum values of vitamins A and D contents established in this specification are in compliance with current legislation in Argentina, which can be adjusted with the specifications provided by the user.


		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 4/10

Microbiological characteristics		
Parameter determined	Value	Analytical method
Aerobic Mesophiles ufc/gr	< 5.000	FIL 100 B: 1981
Enterobacteria NMP/gr	m<3	ISO 21528-1: 2004.
Total Coliforms at 30°C NMP/gr	m<3	ISO 4831:2006
Coliforms at 45°C NMP/ g	m<3	APHA 1992 (Chap. 24)
Escherichia coli NMP/ g (*)	m<3	ISO 16649-3: 2015
Staphylococcus aureus Coagulase Positive / g	M<10	AOAC 2003.11
Salmonella ssp / 300 g	Absent	I ISO 6579:2002 (surpassed by ISO 6579-1: 2017)
Molds and Yeasts (*) ufc/g	< 50	ISO 6611 IDF 94
Listeria monocytogenes / 25g(*)	Absent	ISO 11290-1:1996/Adm. 1:2004
Bacillus cereus (*) ufc/g	< 50	ISO 7932:2004
Cronobacter sakazakii / 300 gr (*)	Absent	ISO/TS 22964:2006 (IDF/RM 210:2006)
Clostridium Sulphite Reducers at 37°C ufc/ g (*)	< 10	ISO 15213:2003
Clostridium Sulphite Reducers at 46 °C (C. perfringens) ufc/ g (*)	< 1	ISO 7937:2004

(\*) Analysis carried out by weekly monitoring or at the request of the customer

Chemical contaminants		
Parameter determined	Value	Analytical method
Inhibitors and antibiotics (*)	Non-detectable	AOAC 988.08
Gliadins	< 5 mg/kg	RIDASCREEN Gliadin R7001 Sandwich-Enzyme Immunoassay (Biopharm)
Aflatoxins	< 0.5 mg/kg	ISO 14501:2007
Nitrates	< 50 mg/kg	ISO 14673-3
Nitrites	< 2.0 mg/kg	ISO 14673-3
Radioactivity	Am-241+Pu-239 $\leq$ 1 Bq/kg Sr-90+I-131 $\leq$ 100 Bq/kg Cs-134+Cs-137 $\leq$ 100 Bq/kg	CNEA

"Once this document is downloaded or printed, it shall be considered an uncontrolled copy. Therefore, LÁCTEOS LA RAMADA is not responsible for its update"

		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 5/10

Arsenic	< 0.5 mg/kg	AOAC 2013.06
Cadmium	< 0.2 mg/kg	AOAC 2013.06
Chrome	< 1.0 mg/kg	ICP-MS
Mercury	< 0.01 mg/kg	AOAC 2013.06
Lead	< 1.0 mg/kg	AOAC 2013.06
Benzopyrenes	< 3.0 ug/kg	LC-MS/MS
Organochlorines Pesticides	< 10 ug/kg	CG-MS (MS)
Organophosphorus Pesticides	< 10 ug/kg	CG-MS (MS)

All these analyzes are carried out by annual monitoring or at the request of the customer, except (\*) which is carried out for all batches.


#### 4.7 Nutritional information

Average nutritional information	Quantity in 100 g	Amount per proportion (*)	%VD
Energetic value	499 kcal = 2086 kJ	125 kcal = 522 kJ	6%
Carbohydrates	Min. 36 g / Max. 40 g	Min. 9 g / Max. 10 g	3%
Total sugars	Min. 36 g / Max. 40 g	Min. 9 g / Max. 10 g	3%
Added Sugars	0 g	0 g	0 %
Proteins	Min. 24 g / Max. 26.5 g	Min. 6 g / Max. 7 g	8% / 9%
Total fats	Min. 26 g / Max. 29.5 g	Min. 6,5 g / Max. 7.5 g	12% / 13%
Sat fats	15 g	3,6 g	16%
Unsaturated fats	13,2 g	2,0 g	-
Trans unsaturated fats	0,3 g	0,1 g	-
Cholesterol	50 mg	13 mg	-
Dietary fiber	0 g	0 g	0%
Sodium	400 mg	100 mg	5 %
Calcium	1000 mg	250 mg	25 %
Potassium	1200 mg	400 mg	12 %
Vitamin A (*)	480 µg or 1600 UI min	120 µg or 400 UI min	20% min
Vitamin D (*)	8 µg or 320 UI min	2 µg or 80 UI min	20% min

Serving Size: 2 tablespoons flush (25 grams) if used as a substitute for whole milk powder.

(\*) It must be expressed according to the dose requested by the customer.


"Once this document is downloaded or printed, it shall be considered an uncontrolled copy. Therefore, LÁCTEOS LA RAMADA is not responsible for its update"

		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 6/10

#### 4.8 Information on allergens and sensitizing substances

	Present in the Product	Present in the same production line	Present in the establishment	Do you guarantee the absence of this allergen or substance in the product supplied?	
				YES	NO
Cereals containing gluten (1)	NO	NO	NO	YES	
Crustaceans and derived products / Molluscs and derived products / Fish and fishing products	NO	NO	NO	YES	
Ingredients of animal origin and/or derivatives.	NO	NO	NO	YES	
Eggs and egg products	NO	NO	NO	YES	
Peanut and derived products	NO	NO	NO	YES	
Soy and derived products (except soy lecithin)	NO	NO	NO	YES	
Soy lecithin	YES	YES	YES		NO
Milk and milk products (including lactose)	YES	YES	YES		NO
Sulfur dioxide and sulfites (2)	NO	NO	NO	YES	
Dried fruits and derived products (3)	NO	NO	NO	YES	
Celery and derived products	NO	NO	NO	YES	
Sesame, cotton, poppy, sesame, sunflower seeds and derived products.	NO	NO	NO	YES	
Mustard and derived products	NO	NO	NO	YES	
Fungus	NO	NO	NO	YES	
Fruits (apple, banana, grapefruit, kiwi, orange, peach)	NO	NO	NO	YES	
CanelaCinnamon	NO	NO	NO	YES	
Non-nutritive sweeteners	NO	NO	NO	YES	
Ethyl alcohol	NO	NO	YES	YES	
Lupins (lupines) and products based on lupins	NO	NO	NO	YES	
Corn and its derived products	NO	NO	SI	YES	
Monosodium glutamate	NO	NO	NO	YES	
Cocoa	NO	NO	NO	YES	
Latex	NO	NO	NO	YES	
Dyes: INS 102 Tartrazine / INS 104 Quinoline Yellow / INS 110 Sunset Yellow FCF / INS 122 Azorubine / INS 124 Ponceau 4R / INS 129 Allura Red AC	NO	NO	NO	YES	
Coconut and derivatives	NO	NO	NO	YES	

"Once this document is downloaded or printed, it shall be considered an uncontrolled copy. Therefore, LÁCTEOS LA RAMADA is not responsible for its update"

		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 7/10

- (1) Cereals containing gluten; for example, wheat, rye, barley, oats, spelt or their hybrid strains, and products thereof, in a concentration of 10 mg/kg or higher.  
(2) Sulfites added at concentrations of 10 mg/kg or higher expressed as SO<sub>2</sub> (does not include naturally occurring sulfites).  
(3) Nuts: almonds, hazelnuts, walnuts, pecans, cashews, chestnuts, pistachios and derived products.

#### 4.9 Storage conditions

Store in its original container, in a cool (<25°C), dry (<70% RH) and dark place.

#### 4.10 Shelf life


- **Big Bag:** 6 months.
- **25kg Bags without modified atmosphere:** 12 months.
- **25kg Bags with modified atmosphere:** 18 months.
- **Multi-laminated film without modified atmosphere:** 12 months.
- **Multi-laminated film with modified atmosphere:** 18 months.

#### 4.11 Packaging

- **BIG BAG:** *Inside:* Three-layer virgin polyethylene low density liner, non-translucent black color; suitable for human consumption. *Exterior:* 100% virgin polypropylene raffia with UV lightning additives.
- **25kg Bags:** primary containers made up of 70-micron multi-layer coextruded polyethylene bags +/- 10% with EVOH barrier, on the inner side; and covered by multi-layer bags of Kraft paper of at least two sheets, printed or labeled, with square bottom and full-pinch closure.
- **Multi-laminated film (pouch):** bi-laminated bag of metallized polyester and polyethylene glass as primary packaging, packed in carton boxes as secondary packaging. Presentation by 500, 800 and 1000g in corrugated cardboard boxes.
- **Multi-laminated film (pouch):** tri-laminated bag of printed metallized polyester and polyethylene glass as primary packaging; presentation in corrugated cardboard boxes.

#### 4.12 Presentation

Big Bag palletized on Arlog CTreated Wooden Pallet	
Units per pallet	1

		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 8/10

Pallet height	Variable by weight
Number of levels	1
Net weight of full pallet	Between 500 and 1200 Kg

25kg Bags	Arlog C treated wooden pallet	Big-sized (220 x 100 cm) treated wooden pallet
Unites per pallet	40	56
Pallet height	200 cm	125 cm
Number of levels	10 max	7 max
Net weight of full pallet	1000 Kg	1400Kg

**Primary packaging:** bi-laminated bag of metallized polyester and polyethylene unprinted glass.  
**Secondary packaging:** cardboard case printed with brand art.  
**Tertiary packaging:** corrugated cardboard boxes printed with brand art.


Net weight	500 g	800 g	1000 g
Units per pallet	1152	640	640
Pallet height	195 cm	200 cm	200 cm
Number of levels	8	8	8
Number of boxes	48	64	64
Number of units per box	24	10	10
Net weight of full pallet	576 Kg	512 Kg	640 Kg

The palletizing formats are declared according to programs available in the palletizing robot. These formats can be adapted to the extent requested by the client manually or automatically.

#### 4.13 Legal references

- Argentine Food Code Chapter I. General Provisions articles 1 and 2
- Argentine Food Code Chapter IV Utensils, Containers, Packages, Apparatus and Accessories, articles from 184 to 219



		Code:EP.013
		Version: 03
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023
		Pages: 9/10

- Argentine Food Code Chapter V Rules for the Labeling and Advertising of Foods articles 220 to 246
- Argentine Food Code Chapter VIII Dairy Products articles from 553 to 556 inclusive.
- Argentine Food Code Chapter VIII Dairy foods. GMC Resolution No. 080/94 Mercosur Technical Regulation on the Identity and Quality of Bulk Fluid Milk for Industrial Use.
- Argentine Food Code Chapter VIII Dairy Products articles 567-567 bis- and 570.
- Argentine Food Code Cap. VIII Dairy Foods. GMC Resolution No. 07/18 Mercosur Technical Regulation for the Identity and Quality of Milk Powder.
- Argentine Food Code Chapter XVII Dietary or Dietetic Foods articles from 1339 to 1346 inclusive.
- Argentine Food Code Chapter XVII Dietary or Dietetic Foods articles from 1358 and 1359bis.
- Argentine Food Code Chapter XVII Dietary or Dietetic Foods articles 1350-1351-1363-1364-1368-1369-1383-1383bis-1387.
- Argentine Food Code Chapter XVIII Food Additives articles from 1391 to 1396 inclusive, including Resolution GMC N° 105/94
- Argentine Food Code Chapter XVIII Food Additives article 1397
- Argentine Food Code Chapter XX Official Analytical Methodology articles from 1413 to 1414.


## 5. INTERNAL DOCUMENTS AND ASSOCIATED RECORDS:

- Customer specifications approved by Lácteos La Ramada SA

## 6. REVIEW HISTORY

Reviewer	Date	Revision	Reasons
Augusto Labath	08/04/2020	00	Creation of new document
Augusto Labath	21/05/2020	01	Change of pallet
Augusto Labath	16/10/2020	02	Update according to new version of RTM Sewn bag format is eliminated

"Once this document is downloaded or printed, it shall be considered an uncontrolled copy. Therefore, LÁCTEOS LA RAMADA is not responsible for its update"

		Code:EP.013	
		Version: 03	
TECHNICAL SHEET	INSTANT MODIFIED POWDER MILK FORTIFIED WITH VITAMINS A and D	Date: 26/06/2023	
		Pages: 10/10	
Augusto Labath	26/06/2023	03	Non-ferrous detection limit modification Update of point 4.7 Nutritional Information Update of point 4.8 Information on allergens and sensitizing substances Updates in points 4.3, 4.6, 4.10 and 4.12