



**A. Low Heat**

		<b>Michigan Milk Producers Association</b> 41310 Bridge Street Novi, MI 48376  Phone: 248-474-6672 Fax 248-442-5695			
Product Category:	Non Fat Dry Milk – Spray Processed	Effective:	09/06/2012		
Product Name:	Grade A – Nonfat Dry Milk – Low Heat	Supersedes:	N / A		
Specification #	Issued By: John Connolly	Approve By:	Jim Dodson		
1010100					

**1.0 Description**

Nonfat Dry Milk is the product obtained by the removal of only water from pasteurized skim milk and does not contain any added preservative, neutralizing agent, or other chemicals.

**2.0 Physical & Chemical Characteristics**



Characteristic	Value	Test Method	COA
Butterfat	≤ 1.25 %	SMEDP	X
Moisture	≤ 4.00 %	SMEDP	X
Scorched Particles	≤ 15.0 mg "B" pad	SMEDP	X
Solubility	≤ 1.2 ml	SMEDP	
Titrateable Acidity	≤ .15 %	SMEDP	X
Total Protein	33% - 38%	SMEDP	
Whey Protein Nitrogen	≥ 6.00 mg/g	SMEDP	X
pH	6.4 – 7.2	SMEDP	X
Color	White to light Cream / natural color	Visual Inspection	
Sensory	Free from Objectionable Flavor or Odors	Organoleptic	X
Antibiotic	Negative (Compliant PMO; Appendix N)	SMEDP	X

**3.0 Microbiological Characteristics**

Characteristic	Value	Test Method	COA
Standard Plate Count	≤ 5,000 cfu / g	BAM - AOAC	X
Coliform	< 10 cfu / g	BAM - AOAC	X
Escherichia Coli	< 10 cfu / g	BAM - AOAC	X
Yeast & Mold	< 10 cfu / g	BAM - AOAC	X
Coagulase-positive staph aureus ( 50 g)	< 10 cfu / g	BAM - AOAC	X
Listeria (375 g)	Negative	BAM - AOAC	X
Salmonella (750 g)	Negative	BAM - AOAC	X

**4.0 Miscellaneous Descriptions**

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Item	Requirement	COA
Allergens	Milk	
Ingredients	Skim Milk	
Shelf Life (from Mfg. Date)	12 months	
Storage Temperature	Dry environment, ambient temperatures	
Shipping Temperature	Same as storage	
Kosher Certificate	Council of Orthodox Rabbis of Greater Detroit	
Halal Certificate	The Islamic Food & Nutrition Council of America	
Pasteurization	Low heat 162.0 °F to 175.0 °F for ≥ 15.0 seconds	

**5.0 Nutrition Facts**



Component	Value	Component	Value
Calories (Kcal)	362	Potassium (mg)	1794
Calories from fat	7	Vitamin A (IU)	22
Total fat (g)	.77	Vitamin C (mg)	6.8
Saturated fat (g)	.499	Calcium (mg)	1257
Cholesterol (mg)	20	Iron (mg)	.32
Total Carbohydrate (g)	51.98	Riboflavin (mg)	1.55
Sugars (g)	51.98	Phosphorus (mg)	968
Protein (g)	36.16	Ash (g)	7.93
Sodium (mg)	535	Moisture (g)	3.16

- Calculated value of 100 grams of Nonfat Dry Milk based on USDA National Agricultural Library – Agricultural Research Service NDB No: 01091. Analysis may be need for these nutrients as they occur in the final product as required by CFR Title 21, Section 1019.

**6.0 Statements**

- MMPA Nonfat Dry Milk meets all requirements of North American Free Trade Agreement (NAFTA).
- Products manufactured by Michigan Milk Producers Association do not contain gluten
- MMPA Products are exempted from OSHA Hazard Communication Standard #303 since they are subject to Food and Drug Administration labeling requirements.
- This product was produced from raw milk meeting the somatic cell ( ≤ 400,000 per ml.) and bacterial standard plate count ( ≤ 100,000 per ml.) requirements of Regulation (EC) No 853/204 Annex III, Section IX, Chapter I, III Criteria for Raw Milk.

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## 7.0 Plants

	MMPA - Ovid	MMPA - Constantine
Address	431 Williams Street, Ovid MI 48866	125 Depot Street, Constantine, MI 49042
Phone / Fax	Phone 989-834-2221 Fax 989-834-2486	Phone 269-435-2835 Fax 269-435-8310
Plant Identification	IMS 26-123 Europe 1810532	IMS 26-608 Europe 1810166
Bioterrorism Act	15067918418	1581354300
Shipping Hours	Monday – Friday 8:00 AM to 3:30 PM	Monday – Friday 7:00 Am – 3:00 PM

## 8.0 Packaging

### Dimensional Information

Product Code	Description	Product Weight	Bag Height/Length/Width	UPC Code	Layer / Tiers	Pallet Heights	Product Weight per Pallet
1010100	50# Grade A LH NFDM	50.0 lbs	34.0"x4.0"x16.0" Multiwall Kraft bags with polyethylene inner liner	0 77777 10400 2	5 /10	51 "	2,500 lbs.
1010410	2,000# Grade A LH NFDM tote	2,000 lbs	48.0"x40.0"x57.0"	N / A	1	61"	2,000 lbs
1010420	2,200# Grade A LH NFDM tote	2,200 lbs	48.0"x40.0"x57.0"	N / A	1	61"	2,200 lbs

### Powder Coding

Ovid	Constantine
MFG DATE/LOT NO. 02-05-07V	MFG DATE/LOT NO. 02-05-07C
SUB LOT 001-001	SUB LOT NO. 001-001
100 Bags per lot	100 Bags per lot

## 9.0 Product Specification History

Effective Date	Revision	Reason for Change / Initiator	Approved By:
09/06/2012	0	Specification birth date, J. Connolly	<i>Jim Dodson</i>

## E. Low Heat



### Arla Foods amba Product Information

#### Certificate of Analysis (CoA) and Release Procedure

Certificate of Analysis (CoA) with selected parameters from above 'Chemical, Physical and Microbiological Specifications' is available after 'positive release' at packed batch level.

Methods in use are with reference to international recognised standards (e.g. ISO, IDF) if applicable.

Testing is mainly performed at own lab, which participates in relevant proficiency schemes. Pathogen testing is performed by accredited labs/methods.

Representative samples are collected from each production batch.

Testing is performed on selected parameters as a combination of individual final batch testing and monitoring of the whole production process.

Retain samples representing all delivered batches are kept during prescribed shelf life.

#### Origin, Health Mark / Identification Mark (Id. mrk.)

This product can be produced of milk from the EU at: Arla Foods Vimmerby. Id. mrk.: SE - 1022 - EC. The production country and site is identified on the packaging through the identification marks listed.

#### Packaging

Multi-layer paper bag with a PE inner liner; 25 kg net (with PE-liner). Big bags available upon request.

Bags loaded loose in container).

Per customer agreement on new wooden heat treated pallets with cover - full wrapped or with a plastic hood.

#### Storage

Products are to be stored in closed bags away from strong odours under cool, dry conditions to prevent deterioration due to humidity and high temperatures.

#### Shelf Life

18 months minimum if kept under the prescribed storage conditions.

#### Preservation

*Arla Skimmed Milk Powder* has not been irradiated. Preservatives e.g. benzoate, sorbate have not been added.

#### Remarks

For products with Kosher and/or Halal certificate please request for availability.

For product packed under protective atmosphere please ask for availability.

#### REACH/CLP/MSDS

Registration, Evaluation, Authorisation of Chemicals (REACH) Regulation (EC) No. 1907/2006: As food/feed as well as for other purposes milk powders are exempted from REACH (ref. to art. 2(3) and Annex V (8)).

Classification, labelling and packaging (CLP) Regulation (EC) No. 1272/2008: Milk powders are not hazardous substances/ mixtures and not classified as dangerous (Dir. 67/548/EEC) - no need for labelling in this respect.

Safety Data Sheet (MSDS) available upon request.

#### Various Contaminants - Monitoring

Antibiotic - below legal maximum residue levels (MRL) - tested on raw milk at silo tank level prior to release for production, by use of quick test (Beta Star).

Aflatoxin M1 - verified through random testing of raw milk samples - results well below 0.05 mcg/l milk.

These specifications are for product to be offered and delivered by Hoogwegt US, Inc. for the Convocatoria No. 001-2015 del Contingente Arancelario Ordinario de productos lacteos, correspondiente al 2015 I semestre, and for delivery between January 1st and June 30th, 2015.

Arla Foods amba

Head Office:  
Sandtorvej 14, DK-8260 Viby J.  
Denmark  
Tel: +45 99 38 10 00

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www.arla.com  
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Hoogwegt U.S., Inc.

## E. Low Heat



### Arla Foods amba Product Information

Pesticides – yearly monitoring through representative samples of raw milk. No detection at 0.01 mg/kg (LOD) or below as applicable, i.e. well below legal maximum residue levels (MRL).

Through monitoring of milk and/or products the below can be confirmed to be in control for the powder:

Dioxins (WHO-PCDD/F-TEQ) pg/g milk fat	< 3
Lead (Pb) mg/kg	< 0.05
Arsenic (As) mg/kg	< 0.1
Mercury (Hg) mg/kg	< 0.005
Nitrate (NO <sub>3</sub> ) mg/kg	max 50
Nitrite (NO <sub>2</sub> ) mg/kg	max 5

Melamine due to adulteration is absent – verified through monitoring of products to be well below 0.5 mg/kg.

Our authorities are over viewing radioactive out-falls and monitor the residue level in food, water and environment. For milk the level of Cs<sub>134</sub>+Cs<sub>137</sub> and Sr<sub>90</sub> are tested to be well below 10 Bq/kg.

#### Nutritional Data (Avg. values\* for nutrition labelling per 100 g)

Energy (calculated)	1500/355 kJ/kcal
Protein (Nx6.38)	32 g
Carbohydrate	54 g
of which sugars (lactose)	54 g
Fat	1 g
of which saturated fatty acids	0.8 g
trans fatty acid	0.04 g
Dietary Fibre	0 g
Sodium	0.4 g
<u>Selected elements</u>	
Vitamin B <sub>2</sub>	1.4 mg
Calcium	1100 mg
Potassium	1500 mg
Phosphate	900 mg

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(\*based on best available data including data from literature. For more info [www.foodcmap.dk](http://www.foodcmap.dk) and [www7.slv.se/Naringssok/](http://www7.slv.se/Naringssok/) can be consulted).

#### Legal References

*Arla Skimmed Milk Powder* is in legal terms a food ingredient fit for human consumption or for production of food for human consumption meeting standards laid down by the EU and/or FAO/WHO Codex Alimentarius, as applicable. It is labelled according to relevant EU legislation.

National legislation should always be consulted for application and labelling.

The product is produced at factory units authorized by and under supervision of national authorities for production of food of animal origin (milk based). Assigned authorization number is printed on the packaging.

The factory units have established HACCP plans for the production based on ISO 22000.

The product is produced from pasteurized milk/milk constituents from healthy cows. Monitoring programs for undesirable matters are established for the milk and/or the product according to legislation and HACCP based risk assessment.

Products produced at facilities within the EU are based on milk/milk constituents fulfilling EU standards, demands and legislation.

Packaging materials comply with demands laid down for materials and articles intended to come into contact with food (in dry powder form).

#### GMO Status

*Arla Skimmed Milk Powder* is considered as a non-GMO product according to the definition for GMO stated in EU Directive No 2001/18, art. 2 and thus requires no GMO labelling, in accordance with EU Regulation (EC) No 1829/2003 and EU Regulation (EC) No 1830/2003.

Our objective is to avoid genetically modified ingredients

Arla Foods amba

Head Office:

Søndervig 14, DK-8260 Viby

Denmark

Tel: +45 89 38 10 00

Gustavo Wu

Export Manager

Hoogwegt U.S., Inc.

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### Arla Foods amba Product Information

in our products.

No GM techniques are used for the production.

When purchasing raw materials we look for non-GMO raw materials subject to the EU definition above, based on the GMD information we receive from our suppliers.

#### Allergens

*Arla Skimmed Milk Powder* the below table indicates the presence of ingredients known to cause allergy reaction\* to some people:

Yes	No	Allergens	Description of components
	X	Cereals containing gluten and product thereof	
	X	Crustaceans and products thereof	
	X	Eggs and products thereof	
	X	Fish and products thereof	
	X	Peanuts and products thereof	
	X	Soya beans and products thereof	
X		Milk and products thereof (including lactose)	From bovine milk
	X	Nuts and products thereof	
	X	Celery and products thereof	
	X	Mustard and products thereof	
	X	Sesame seeds and products thereof	
	X	Sulphur dioxide and sulphites (>10 mg/kg)	
	X	Lupine and products thereof	
	X	Molluscs and products thereof	

\* based on Annex 3A in EU Directive 2000/13 as amended.

#### Analytical methods

Methods in use in our lab are with reference to the below listed standard methods, as applicable.

Protein (Nx6.38)	ISO 8968-3:2004 IDF 20-3:2004
Fat	ISO 1736 IDF 9:2008
Moisture	NMKL 110 2. Ed.: 2005
Minerals (ash)	NMKL 173:2005
Titratable acidity	ADPI 916:1990 ISO 6091:1980

pH (10% solution)	
Bulk density / Bulk volume	IDF 134:2005 ISO 8967:2005
Scorched particles (in) Solubility Index	ADPI 916:2002 IDF 129:2005 ISO 8156:2005

Total Plate Count	ISO 4833:2003
Bacillus Cereus	ISO 7932:2004
Anaerobic sulphite-reducing Bacteria spores (Clostridia)	NMKL No 56, 4. Ed.: 2008
Enterobacteriaceae	ISO 21528-2:2004
Coagulase-positive staphylococci (aureus)	ISO 6888-1: 1999
Yeast and Mould	ISO 6611:2004 IDF 94:2004
Salmonella	BAX System Q7* ISO 6579:2002

\*BAX System Q7 approved for salmonella testing by AOACRI, AFNOR, NordVal, USDA Food safety Inspection Service and validated by Danish authorities against ISO 6579:2002.

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Gustavo Wüst  
Export Manager

Hoogwegt U.S., Inc.  
Arla Foods amba  
Head Office:  
Sendvoldvej 14, DK-8290 Viby J,  
Denmark  
Tel.: +45 89 38 10 00

www.arla.com

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Arla Foods amba  
Product Specification

### ARLA® SKIMMED MILK POWDER LOW HEAT REGULAR

Chemical Specifications	Units	Min.	Max.
Protein as Is	(Nx6.38) %	32.5	33.7
Prot. in non fat milk solid	%	34	
Whey protein N-index	(in mg/g)	6.0	
Lactose as Is	%	52	56
Fat	%		1.25
Minerals	%	7	9
Moisture	%		4
Tit. acidity as lactic acid	%		0.15

Physical Properties	Units	Min.	Max.
pH	(10% solution)	6.5	6.8
Scorched Particles	%	Disc A	
Bulk density (625x)	g/cm <sup>3</sup>	0.61	0.80
Bulk volume (625x)	cm <sup>3</sup> /100g	125	165
Colour		White to yellow	
Flavour/Odour		Milky	
Sensoric Evaluation		Normal	

Functional Properties	Units	Min.	Max.
Insolubility index	ml		0.5

Microbiology	Units	Min.	Max.
Total plate count	(30 °C) CFU/g		10,000
Bacillus cereus	CFU/g		100
Sulph. red. clostr. spores	CFU/g		50
Enterobacteriaceae	CFU/g		<10
Staphylococcus aureus	CFU/g		<10
Yeast and mould	CFU/g		100
Salmonella	in 125 g	Absent	



VER-1/2011  
Arno Wüst  
Plant Manager  
Hoogwegt U.S. Inc.  
Send email to: arno.wust@arlab.com  
D. nmark  
Tel: +45 89 38 10 00

www.arla.com

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