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		Valid from: 2011.06.07 Valid to:
Milk Cow Whole Powder 26-28% Fat Dry Mix Status: Approved INTERNAL USE ONLY		

Specification author:	Peter ALEXANDER
Creating Organization	PTC Konolfingen

GENERAL DESCRIPTION

Powdered whole milk, spray dried. Derived from cow's milk.

GENERAL REQUIREMENTS

Quality and Legislation

The raw material shall comply with applicable laws and regulations in the country of its destination or Codex Alimentarius, whichever is stricter, unless otherwise specified. If the purchaser has determined specific limits for its own needs, the strictest of the three shall apply.

Quality	Food grade The raw material must not contain any substances, materials or biological agents in amounts which may represent a risk to consumer health.	
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INTENDED USE

Relevant process	Used in products made by dry mixing without any further heat processing	
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Not for use in Infant Nutrition and Healthcare Nutrition.

SENSORY REQUIREMENTS

Appearance as is	Absence of lumps with the exception of those which crumble easily
Color as is	White in color, without scorched particles
Taste as is	Must be pure, i.e. neither tallowy, nor stale, nor of caramel and must not have any other abnormal taste deviations.
Sample preparation	21 g of sample to be dissolved in 150 ml water at 50 °C.
Appearance after preparation	Homogeneous, cloudy solution.
Color after preparation	White to slightly yellowish.
Odor after preparation	Typical of milk, sweet, no off-odors.
Taste after preparation	Typical of whole milk, sweet, rich, creamy, no off-taste.

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PHYSICAL-CHEMICAL REQUIREMENTS

In addition to the limits set by local legislation or Codex Alimentarius, Nestlé has determined specific limits for its own needs. Where applicable these are listed below.

Quantitative

Parameter	Minimum	Maximum	Target	Comments
Moisture		2,7 g/100g		Oven, 102°C.
Acidity		0,13 %(m)		ADPI, as lactic acid
Crude proteins	34 g/100g			TN*6.38, on SNF
Fat content	26 g/100g	28 g/100g		
Copper		1,5 mg/kg		
Solubility index		0,5 ml		ADPI

Qualitative

Parameter	Comments
Dirt test	Max. disk A (scorched particles ADPI on 25 g)
Foreign material	Free from (state of the art).
Impurities	Free from (state of the art).

ADDITIVES

In addition to the limits set by local legislation or Codex Alimentarius, Nestlé has determined specific limits for its own needs. Where applicable these are listed below.

Parameter	Minimum	Maximum	Requirement	Comments
Additives			Absent	

CONTAMINANTS

In addition to the limits set by local legislation or Codex Alimentarius, Nestlé has determined specific limits for its own needs. Where applicable these are listed below.

Parameter	Maximum	Requirement	Comments
Antibiotics			MRLs (maximum residue limits) according to regulations, or non-detectable by reference method for non-authorized antibiotics.
Cyanuric acid	2,5 mg/kg		
Melamine	2,5 mg/kg		
Aflatoxin M1	4 µg/kg		The indicated limit is based on Codex norm for liquid milk. Local legislation which can be stricter has to be respected.



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**Purchasing Specification
Raw Material**

100015305201

Valid from: **2011.06.07**

Valid to:

Milk Cow Whole Powder 26-28% Fat Dry Mix

Status: **Approved**

INTERNAL USE ONLY

MICROBIOLOGICAL REQUIREMENTS

The expression of microbiological quality criteria is based upon that recommended by "The International Commission on Microbiological Specification for Foods" where:

n = Number of samples

c = Maximum number of samples greater than or equal to m and less than M

m = Microbiological limit that:

- in a 2 class plan separates good from defective quality;
- in a 3 class plan separates good from marginally acceptable quality.

M = Microbiological limit that:

- in a 3 class plan separates marginally acceptable from unacceptable quality;
- in a 2 class plan M may be assimilated to m.

Contaminant Microorganisms

Parameter	n	c	m	M	Comments
Aerobic mesophilic microorganisms	5	2	3.000 /g	10.000 /g	ISO 4833
Enterobacteriaceae	5	0	0 /g		ISO 21528
Salmonella	60	0	0 /25g		ISO 6579 Max. pooling 200g per examination.

PACKAGING, STORAGE & TRANSPORTATION

Use only Packaging Materials for food ingredients which are compliant to relevant food contact regulations/international standards.

Upon request, the vendor must provide a certificate of compliance to the food contact regulations for all food ingredient packaging materials.

Parameter	Requirement	Comments
Packaging	Impervious to air Impervious to light Impervious to moisture Use only contact packaging materials approved for food use in the country of destination	

ANALYTICAL METHODS

Analytical methods	Analytical methods are available on request	
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Annexed 1

Following special Sensory & Physico-Chemical requirements for Milk Cow Whole Powder
26-28% Fat Dry Mix # 100015305201

SENSORY REQUIREMENTS

Appearance as is	Very fine powder, <u>presence of lumps</u> is desired and somewhat <u>difficult to dissolve</u> in warm water
Color as is	White to yellowish, without scorched particles
Taste as is	Must be pure, i.e. neither tallow, nor stale, nor of caramel and must not have any other abnormal taste deviations.
Taste after preparation	Pure, clean fresh cow milk i.e. neither tallowy, nor stale, nor of caramel and must not have any other abnormal taste deviations.

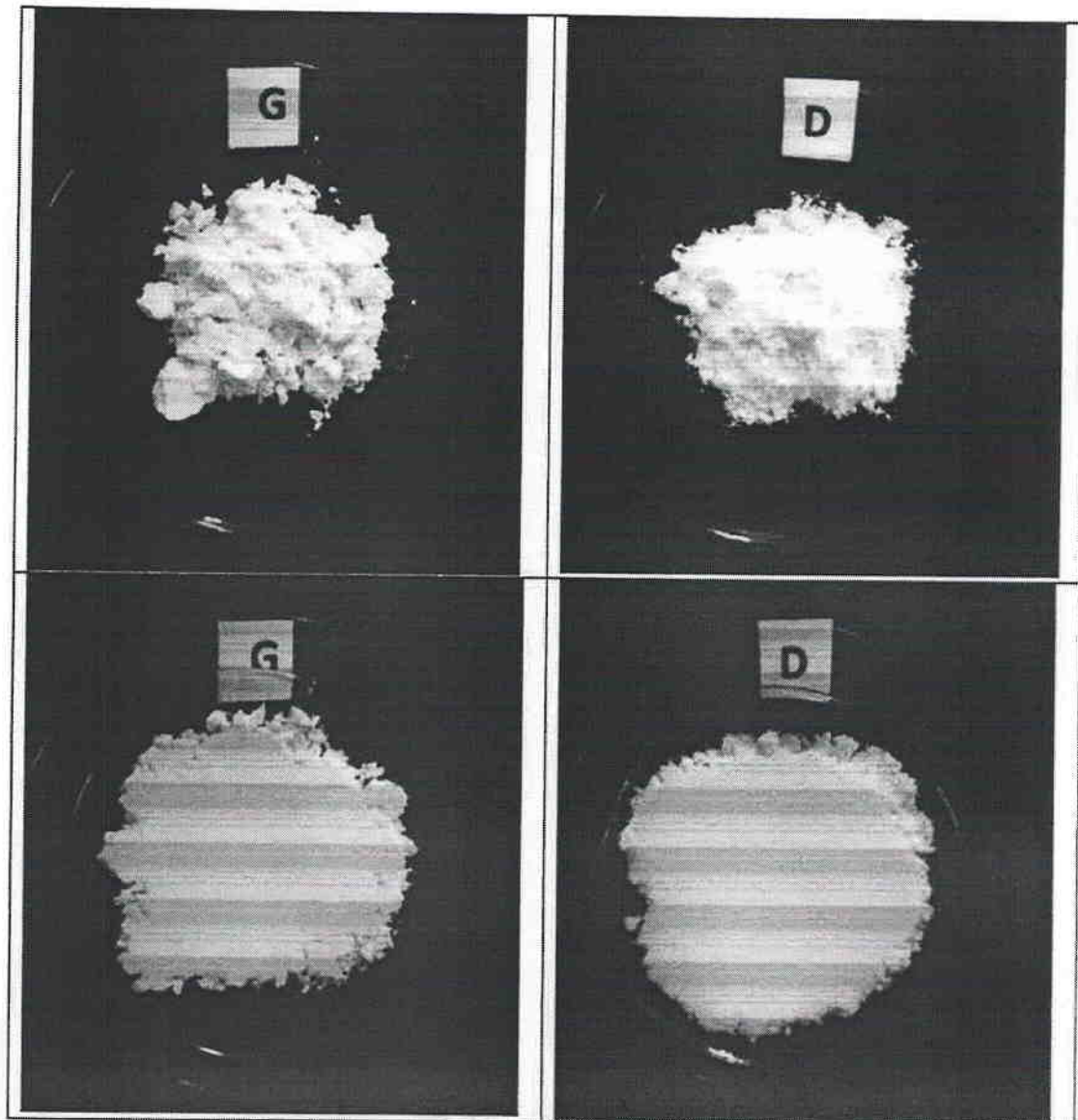
PHYSICAL-CHEMICAL REQUIREMENTS

In addition to the limits set by Nestlé specification # 100015305201, our market has determined specific limits for its own needs. Where applicable these are listed below.

Parameter	Minimum	Maximum	Target	Comments
Fat separation				After standing 1 hour, no separation
Miscibility		5		Presence of lumps is desired
State of Dissolution		4		
Density	640 g/l	690 g/l		Specific gravity
White specks		3		@ 40°C

Picture 1. Powder characteristics (Appearance as is)

Comparative pictures representing our WMP profile (G) vs another WMP product (D). The product D does not comply with our sensory profile especially because it does not have the presence of lumps. Product D also is more agglomerated powder and with better wettability



Pictures 2.

Appearance after reconstitution

Same amount of powder dissolved in warm water at 40-50°C and agitated for 30 seconds.

Product D dissolved easily that our product. We expect our product (G) to get some lumps after reconstitution at 40°C x 30 seconds.

