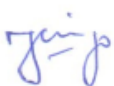



## SPECIFIC SCHEME RULES FOR THE CERTIFICATION OF DAIRY PRODUCTS

Prepared By:	Approved By:
 Mwangelwa C. Matongo <b>Senior Auditor</b>	 NTEEMA MUZANDU <b>Certification Manager</b>

### 1. SCOPE

#### 1.1 Application

This Scheme (hereinafter "Specific Rules") covers requirements of the certification of Dairy Products intended for human consumption for the grant of licence to apply for the ZABS Certification Mark in accordance with Clause 3 of R3400, the General Scheme Rules for the Certification of Food Products.

The Specific Rules apply to the following products;

Technical Cluster	Product Category	Products
Food	Non-Alcoholic Beverages	<ol style="list-style-type: none"> <li>1. Pasteurized Milk</li> <li>2. Yoghurt</li> <li>3. Butter</li> <li>4. (UHT) Sterilized Milk</li> <li>5. Milk Blended Drinks</li> </ol>

#### 1.2 Exclusion

These Specific Rules do not apply to other milk and milk products such as condensed, skimmed, fermented, cheese, creams, and milk powders.

#### 1.3 Scheme Type

ZABS Certification Services operates this Milk and Milk Products Scheme in accordance with ISO 17067:2013 Scheme Type 5. This Scheme comprises the following elements

	PROCESS STEP	ACTIVITIES
1	Pre-certification	<ul style="list-style-type: none"> <li>— Application</li> <li>— Application review, including applicable standards, test requirements, test facility options</li> <li>— Contract/certification Agreement</li> <li>— Audit programme (Scheme of inspections and Testing, frequency of audits, etc.)</li> <li>— Determining the Audit Time</li> <li>— Considerations for multi-site organizations' applicant requirements</li> <li>— Consideration of multiple product standards and applicant requirements</li> </ul>

## SPECIFIC SCHEME RULES FOR THE CERTIFICATION OF DAIRY PRODUCTS

2	Planning Audits	<ul style="list-style-type: none"> <li>— Audit scheduling</li> <li>— Audit team appointment</li> <li>— Audit plan</li> </ul>
3	Initial Certification	<ul style="list-style-type: none"> <li>— Initial Factory Audit</li> <li>— Product Evaluation</li> <li>— Submission of corrective-action plan, if applicable</li> <li>— Follow-up and Close out of major non-conformities, if applicable</li> </ul>
4	Review	— Review of application documents, factory audit report, and product evaluation results
5	Decision	Decisions for <ul style="list-style-type: none"> <li>— granting or refusing certification;</li> <li>— expanding or reducing the scope of certification;</li> <li>— suspending or restoring certification; and</li> <li>— withdrawing certification or renewing certification.</li> </ul>
6	Maintaining Certification	<ul style="list-style-type: none"> <li>— Surveillance activities</li> <li>— Recertification</li> <li>— Special audits</li> <li>— Suspension, Withdrawing or Reducing the scope of certification</li> <li>— Management of Certificates and Marks of Conformity</li> </ul>

### 2. DEFINITIONS

The definitions in section 2 of R3400 General Scheme Rules for the Certification of Food and those in ZS 730:2018, ZS 731: 2010, ZS 733:2010, ZS 735:2017 and ZS 1060:2018 shall apply.

### 3. NORMATIVE REFERENCES

The documents listed below form the basis for certification of Milk and Milk Products:

#### 3.1 Rules Documents

R3400 General Scheme Rules for the Certification of Food Products

#### 3.2 Standards

ZS 730: 2018 Pasteurized Milk — Specification  
 ZS 731: 2018 Yoghurt — Specification  
 ZS 733: 2010 Butter — Specification  
 ZS 735:2017 UHT Milk — Specification  
 ZS 1060: 2017 Milk Blended Drinks — Specification

#### 3.3 Statutory and Regulatory Requirements

Food Safety Act, No. 7 of 2019

Metrology Act, No. 6 of 2017  
Public Health Act Cap 295 of the Laws of Zambia  
The Animal Health Act, No. 27 of 2010  
Dairy Industry Development Act, No. 22 of 2010

### **3.4 Additional Codes/Standards/Specifications**

Codex STAN 192-1995	General Standard for Food Additives
CAC/RCP 57-2004	Code of Hygienic Practice for Milk and Milk Products
ZS 033:2015	Labelling of pre-packaged foods-code of practice. Part 1: General guidelines
ZS 033:2015	Labelling of pre-packaged foods - code of practice Part 2: Guidelines for date marking
ZS 033:2016	Labelling of pre-packaged foods - code of practice Part 3: Guidelines for nutrition labelling
ZS 033:2015	Labelling of pre-packaged foods-code of practice. Part 4: Guidelines on claims
ZS 033:2016	Labelling of pre-packaged foods - code of practice. Part 5: guidelines for labelling of non-retail containers of food

### **4.0 THE MANUFACTURER'S FACTORY PRODUCTION CONTROL**

These requirements are supplemental to those outlined in Section 4 of R3400 General Scheme Rules for the Certification of Food.

#### **4.1 Technical Documentation**

The following technical documentation shall be available at the manufacturer's facility for inspection:

- a) Water resource characteristics: Name of source, typical composition
- b) Concentrates and flavours: Type, country of origin, typical composition
- c) Process description (process steps with key operational parameters): Water treatment, concentrates mixing, bottle washing process, pasteurization, filling conditions)
- c) Finished product characteristics that shall be defined as often as possible with target, acceptable limits and rejection limits:
  - microbiological standards
  - physical-chemical standards (e.g., pH, non-fat solids (TDS), Titratable Acidity (TA), mineral composition, organic chemicals composition)
  - packaging parameters (e.g., filling levels)
  - sensorial characteristics
- d) Packaging description (primary, secondary, tertiary packaging)
- e) Shelf-life definition (e.g., Best Before Date definition)
- f) Batch definition and coding rules
- g) Specific handling, storage and transportation requirements
- h) Control plans (or at least reference to the applicable Control Plan)

#### **4.2 Raw Milk and Ingredients Testing**

All raw materials used in the processing of dairy products shall comply with the specifications of the relevant standard.

Table 1: Requirements for raw materials

Dairy product(s)	Raw material(s)	Relevant standard(s)
Pasteurized Milk	<ul style="list-style-type: none"> <li>Raw cow milk</li> </ul>	ZS 732:2018
Yoghurt	<ul style="list-style-type: none"> <li>Pasteurized milk or concentrated milk</li> <li>Pasteurized fat-reduced milk or concentrated fat-reduced milk</li> <li>Pasteurized fat-free milk or concentrated fat-free milk</li> <li>Pasteurized cream</li> <li>A mixture of two or more of the above products</li> </ul>	ZS 730:2018
Butter	<ul style="list-style-type: none"> <li>Raw cow milk</li> <li>Dairy products</li> </ul>	ZS 732:2018
UHT Milk	<ul style="list-style-type: none"> <li>Raw cow milk</li> </ul>	ZS 732:2018
Milk Blended Drinks	<ul style="list-style-type: none"> <li>Raw cow milk</li> <li>Fruit juice concentrate</li> </ul>	ZS 730:2018/ ZS 731:2018/ ZS 732:2018/ZS 735:2017

All essential ingredients and additives shall comply with relevant specifications. All additives shall comply with the limits set in Codex STAN 192.

#### 4.3 Dairy processing

The Establishment shall provide hygienic, safe and sound storage facilities for ingredients and milk as per the requirements in ZS 1224 and the code of practice for milk and milk products (see checklist in Annex 1). The unit operations used for dairy processing shall sufficiently produce a final product that meets the requirements outlined in Table 1 and the Final Product specifications set by the Establishment. The pasteurizing process, methods and equipment used shall facilitate the removal of all physical foreign matter from the milk. Water used in dairy processing shall be tested at least twice per year for physical, chemical, and biological parameters in conformance with potable water standards, ZS 190:2010 Drinking Water Quality- Specification.

#### 4.4 Control Plans

Product monitoring shall be operated through monitoring plans. These analyses can be either operated in-house or externally. Control plans shall include, at a minimum:

- a) product and process specifications to be monitored,
- b) frequency of monitoring,
- c) target, minimum and maximum limits (tolerances),
- d) person/s responsible for product monitoring,
- e) person/s responsible for reviewing monitoring results,
- f) corrective actions when specification limits are breached.

#### 4.5 Finished Product Testing

When tested according to the requirements of the product standards mentioned in clause 3.2 of these specific rules, the test results shall conform to the specified limits in those relevant product standards.

Tests on final products shall be conducted as per requirements in Table 2.

Table 2: Specifications for Pasteurized Milk (ZS 730:2018)

Parameter	Type of pasteurized milk	Requirement	Significance
Milk fat (%)	Whole milk	3.2 minimum	Major
	Fat reduced milk	1.51 – 3.24	Major
	Low-fat milk	0.51 – 1.50	Major
	Fat-free (skimmed)	0.5 maximum	Major
Milk solids non-fat (%)	All types	8.5 minimum	Minor
Total plate count (cfu/ml)	All types	25,000 maximum	Minor
Coliforms (cfu/ml)	All types	5 maximum	Major
E. Coli (cfu/ml)	All types	absent	Critical
Density at 20 °C	All types	1.028 – 1.036	Minor
Freezing point depression (°C)	All types	0.525 – 0.550	Minor

cfu/ml - Colony forming units per millilitre

NOTE 1: TVC is an indicator of quality, not safety, and cannot directly contribute towards a safety assessment of food. In addition, TVCs can provide useful information about the general quality and remaining shelf life of the food in question, however they are not deemed a priority in a risk-based analysis (Centre for Food Safety Food and Environmental Hygiene Department – Microbiological guideline for food - August 2014 edition)

Table 3: Specifications for Yoghurt (ZS 731:2018)

Parameter	Type of yoghurt	Requirement	Significance
Milk fat (%)	Whole milk yoghurt	3.0 minimum	Major
	Fat-reduced milk yoghurt	0.5 – 3.0	Major
	Fat-free (skimmed) yoghurt	0.5 maximum	Major
Milk solids non-fat (%)	All types	8.2 minimum	Minor
E. Coli (cfu/g)	All types	absent	Critical
Coliforms (cfu/g)	All types	10 maximum	Major
Salmonella spp (cfu/g)	All types	Absent	Critical
Yeast and Moulds (cfu/g)	All types	10 maximum	Minor
Staphylococcus aureus (cfu/g)	All types	Absent	Critical
pH	All types	< 4.5	Minor

Table 4: Specifications for Butter (ZS 733:2010)

Parameter	Type of butter	Requirement	Significance
Milk fat (%)	Salted	80 minimum	Major
	Unsalted	82 minimum	Major

Milk solids non-fat (%)	All types	2 maximum	Minor
Salt (%)	Salted	2.5 maximum	Minor
	Unsalted	Nil	Minor
Water content (%)	All types	16	Major
Total plate count (cfu/ml)	All types	100,000 maximum	Minor
E. Coli (cfu/g)	All types	absent	Critical
Salmonella spp (cfu/25 g)	All types	Absent	Critical
Yeast and Moulds (cfu/g)	All types	30 maximum	Minor
Free fatty acid	All types	< 0.4	Major

Table 5: Specifications for UHT (Sterilized) Milk (ZS 735:2018)

Parameter	Type of UHT (sterilized) milk	Requirement	Significance
pH variation on 7 days incubation	All types	0.3 maximum	Minor
Titration acidity variation on 7 days incubation, % lactic acid	All types	0.02 minimum	Minor
Milk fat (%)	Whole milk	3.2 minimum	Major
	Fat reduced milk	1.51 – 3.24	Major
	Low-fat milk	0.51 – 1.50	Major
	Fat-free (skimmed)	0.5 maximum	Major
Milk solids non-fat (%)	All types	8.5 minimum	Minor
Total plate count (cfu/ml)	All types	10 maximum	Minor
Total Coliforms (cfu/ml)	All types	absent	Major
E. Coli (cfu/ml)	All types	absent	Critical
Density at 20 °C	All types	1.028 – 1.036	Minor
Freezing point depression (°C)	All types	0.525 – 0.550	Minor

Table 6: Specifications for Milk Blended Drinks (ZS 1060:2018)

Parameter	Type of milk blended drinks	Requirement	Significance
Total acidity, (% m/v)	Ready to drink	0.2 – 0.46	Minor
	Concentrate	0.3 – 0.6	
pH	Ready to drink	3.3. – 4.5	Minor

	Concentrate	2.8 – 3.6	
Total soluble solids (% m/m)	Ready to drink	5.0 – 13.0	Critical
	Concentrate	10.0 – 18.0	Critical
Total solids (% m/m)	Ready to drink	5 minimum	Minor
	concentrate	7 minimum	
Total milk solids	All types	1 minimum	Critical
Arsenic (mg/kg)	All types	0.1	Critical
Copper (mg/kg)	All types	2.0	Critical
Lead (mg/kg)	All types	0.2	Critical
Mercury (mg/kg)	All types	0.1	Critical
Tin (mg/kg)	All types	250	Critical
Total plate count (cfu/ml)	All types	10 maximum	Minor
Total Coliforms (cfu/ml)	All types	absent	Major
E. Coli (cfu/ml)	All types	absent	Critical
Density at 20 °C	All types	1.028 – 1.036	Minor
Freezing point depression (°C)	All types	0.525 – 0.550	Minor

## 5.0 THE CERTIFICATION PROCESS

These requirements are supplemental to those outlined in Sections 5 to 11 of R3400 General Scheme Rules for the Certification of Food Products.

### 5.1 Sampling and Testing for Granting Certification

#### 5.1.1 Sampling

If the sample passes factory testing, samples of dairy products shall be drawn during Factory Audit and sent for complete Testing for all requirements of the Zambian Standard mentioned in Clause 3.2 of these specific rules. The following details shall be indicated on the sample details form:

- Sample Description:
- Sample Identification:
- Sample source:
- Date sampled:
- Sampled By:
- Audit location, if applicable:
- Date of Audit, if applicable:
- Name of testing Facility

For the purpose of demonstrating conformance with these Specific Rules, sampling shall be done in accordance with ZS ISO 5538 and ZS ISO 8197.

The sample size for dairy products to be sent to the third-party laboratory for Testing is as shown in Table 7 below:

Table 7 Sample Sizes to be Collected for Granting Certification

Description of sample	Minimum recommended sample size	Recommended temperature (°C) before and during transportation	Number of containers/packs	Distribution of samples for analysis
Pasteurized milk	100 ml or 100 g	1 to 5	3	1 –Micro, 1 –Chemical and 1 –Retention
Yoghurt	100 g	1 to 5	3	1–Micro, 1 –Chemical and 1 –Retention
Butter	50 g	1 to 5 (in the dark)	3	1 –Micro, 1 –Chemical and 1 –Retention
UHT (sterilized) milk	100 ml or 100 g	Ambient, max. 30	3	1 –Micro, 1 –Chemical and 1 –Retention
Milk blended drinks	100 ml or 100 g	1 to 5	3	1 –Micro, 1 –Chemical and 1 –Retention

NOTE 2: samples must be drawn from the same batch.

### 5.1.2 Testing

The following tests shall be carried out by a laboratory capable of demonstrating conformance with ISO 17025 standards. ISO 17025 accredited laboratories shall be recognized, while non-accredited laboratories may be approved after successfully undergoing an assessment by ZABS.

Dairy products shall conform to the requirements in the tables above. When non-conforming test results involve critical requirements, the procedure for retesting out-of-specification test results shall be followed. For non-conforming test reports that involve minor requirements, a corrective action plan shall be submitted, and verification of the effectiveness of the corrective action shall be determined in the next surveillance audit.

## 6.0 CHANGES TO CERTIFICATION AND COMMUNICATION OF CHANGES

These requirements are outlined in Section 12 of R3400 General Scheme Rules for the Certification of Food Products.

## 7.0 TRANSFERS OF ACCREDITED CERTIFICATES

These requirements are outlined in Section 14 of R3400 General Scheme Rules for the Certification of Food Products.