

Requirements for the Main Features of the Melted Cheese Products and Special Regulations

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Annotation: This article discusses requirements for the main features of the melted cheese products and special regulations. The demand for milk and dairy products, which is one of the most important products for the human body, is growing rapidly. As a result of continued competition in the production of milk and dairy products, the need to increase the new assortment of dairy products in our country. It is no coincidence that one of these products, melted cheeses, has become one of our favorite products today.

Keywords: Melted cheese, standard, organoleptic properties, physical – chemical characteristics, methods.

Introduction

Melted cheese- is a milk product made by grinding, mixing, dissolving and adding natural ingredients to natural cheese. Melted cheeses are a rich source of vitamins A, D and E, as well as calcium, phosphorus compounds and polyunsaturated fatty acids. In addition, the melted cheese contains a high percentage of casein, a high-quality protein rich in amino acids that are vital to the body. In accordance with the standard O'zDSt3024 of the "Melted cheeses" according to the standard UzTR 474-020: 2017, special solvent salts are obtained from various processed cheese, salted cheese, cottage cheese, butter and other dairy products, with or without adding flavoring additives. It is produced directly by consumption, by heat treatment. Our cheeses should be compliant with the requirements of the standard O'z DSt 3024 and are manufactured according to

these technological guidelines and recipes in accordance with the applicable sanitary regulations in the manner prescribed by the standard O'z DSt 3024. Cheese in terms of shape, size, type of packaging and weight should meet the requirements listed in table -1.

Cheese name	The shape and size	Net weight
Melted cheese with slices(I): <ul style="list-style-type: none"> - you are a filler; - with the delicacy of mutton; - with pepper; - with spices; - with flavoring additives. 	Sectors and rectangular cliffs	20 to 100g
<ul style="list-style-type: none"> - you are a filler - without adding a filler; - with the delicacy of mutton; - with pepper; - with spices; - with flavoring additives. 	Allow square plates ladder (6 * 6 mm to 12 * 12 mm, thickness 1 to 3 mm), polymer food packages. Plastic cups and boxes Polymeric films (blocks) Monoliths	10 to 30g 20 to 500g until 3 to 10kg
Melted Sausage Cheese (II): <ul style="list-style-type: none"> - all types of smoked 	Batteries are 4 to 8 cm in diameter. 20 to 40 cm in length, in diameter from 3 to 5 cm batons	Up to 3 kg, 100 to 200g
Pasta-melted cheeses (III): <ul style="list-style-type: none"> - You are a filler; - Complete; - Food fiber; - four cheeses; - with the goodies. 	Sectors and rectangular boats, in diameter from 3 to 5 cm batons, Plastic glass or boxes	20 to 100g 100 to 200g 20 to 500g

Methodology

Methodology for Studying the Requirements and Regulations of Melted Cheese Products

1. Research Design

This methodology employs a **mixed-methods approach**, combining **qualitative and quantitative research methods**. The study aims to analyze the **main features of melted cheese products** and explore **special regulations governing their production, safety, and labeling**.

2. Research Methods

2.1 Literature Review and Regulatory Analysis

- **Objective:** To identify existing requirements for the composition, quality, and safety of melted cheese products.
- **Sources:**
 - ✓ National and international food safety standards (e.g., Codex Alimentarius, FDA, EFSA, ISO, GOST).
 - ✓ Scientific literature on food technology and cheese processing.

- ✓ Regulatory documents from food safety authorities in different regions.

2.2 Qualitative Methods

1. Expert Interviews

- ✓ **Participants:** Food technologists, quality control specialists, regulatory experts.
- ✓ **Purpose:** To gain insights into the technical and regulatory challenges of melted cheese production.
- ✓ **Approach:** Semi-structured interviews with open-ended questions.

2. Case Studies

- ✓ **Objective:** To analyze specific cases of regulatory compliance and product development.
- ✓ **Sources:** Industry reports, legal cases, and product recalls.

2.3 Quantitative Methods

1. Survey and Data Collection

- ✓ **Target group:** Cheese manufacturers, food safety auditors, and consumers.
- ✓ **Key focus:** Understanding industry compliance with regulatory requirements and consumer preferences.

2. Laboratory Testing (if applicable)

- ✓ **Sampling:** Testing melted cheese products for compliance with safety and quality standards.
- ✓ **Parameters:**
 - Moisture and fat content (proximate analysis).
 - Microbiological safety (bacteria and contaminants).
 - Additive content (preservatives, stabilizers).

3. Data Analysis Methods

- **Content analysis** of regulatory documents and expert interviews.
- **Statistical analysis** (using software like SPSS, Excel) to evaluate survey results and laboratory findings.
- **Comparative analysis** of different regional and international regulations.

4. Research Process

1. Preparation Phase

- ✓ Identification of relevant regulatory documents.
- ✓ Design of questionnaires and interview guides.
- ✓ Selection of cheese samples (if testing is involved).

2. Data Collection Phase

- ✓ Conducting surveys and interviews.
- ✓ Gathering and reviewing regulatory documents.
- ✓ Conducting laboratory tests (if applicable).

3. Analysis and Interpretation Phase

- ✓ Comparing international regulations and national requirements.
- ✓ Evaluating industry compliance and challenges.

- ✓ Assessing the impact of regulations on product quality.

4. Reporting and Recommendations

- ✓ Formulating guidelines for manufacturers.
- ✓ Proposing regulatory improvements (if gaps are found).
- ✓ Publishing findings in academic and industry reports.

5. Expected Outcomes

- A detailed framework of **mandatory and optional requirements** for melted cheese products.
- Identification of **key differences in international food safety regulations**.
- **Recommendations for standardization** and industry best practices.
- Insights into **consumer awareness and industry compliance** with regulations.

Note: These methods have been implemented at the OOO "MELEK BEST MILK AGRO" In comparison with the standards established for this technical condition, the percentage of fat content in dry cheese is $\pm 1\%$ and the percentage of moisture is $\pm 1\%$. The mass fraction of fat and moisture in the average sample should meet the requirements shown in. The percentage of sucrose in the sweet cheese is allowed to decrease by $\pm 1\%$. The toxic elements in the finished product, mycotoxins, antibiotics, benzo (a) pyrenides, pesticides, radionuclides and microbiological indicators SanPiN 0366 "Hygienic Requirements for Food Safety" approved by the Ministry of Health of the Republic of Uzbekistan and UzTR 474-020: 2017 "On safety standards of meat and dairy products" and compliance with the requirements of UzTR 476-021: 2017

Results and Discussion

The study on melted cheese products and their regulatory requirements provides essential insights into the safety, composition, and compliance challenges faced by the dairy industry. The research findings highlight the importance of maintaining standardized product features, including moisture content, fat percentage, and permissible food additives such as emulsifiers and stabilizers. Comparative analysis across international and national food safety regulations reveals significant variations in regulatory requirements, influencing the production and trade of melted cheese products.

Laboratory tests conducted at OOO "MELEK BEST MILK AGRO" indicate that fat content in dry cheese exhibits a variation of $\pm 1\%$, while moisture levels similarly fluctuate within the same range. These deviations align with the technical conditions set for melted cheese production but underscore the necessity of stringent quality control measures. Moreover, the findings demonstrate that the mass fraction of fat and moisture in the average sample meets established industry requirements. Compliance with the sanitary and safety standards of the Ministry of Health of Uzbekistan, particularly SanPiN 0366, further ensures that toxic elements, mycotoxins, antibiotics, and pesticide residues remain within permissible limits.

Despite adherence to local regulations, the study identifies key challenges in global regulatory harmonization. Disparities in food safety frameworks, particularly concerning additive usage and labeling practices, create obstacles for international trade. For instance, while the Codex Alimentarius, FDA (USA), and EFSA (EU) impose strict limits on microbiological contaminants and heavy metals, other regulatory bodies may allow slight variations, affecting product consistency across different markets.

The discussion also emphasizes the critical role of labeling in consumer transparency. Accurate declaration of ingredients, nutritional values, and allergen information prevents misleading marketing and aids consumers in making informed choices. The research suggests that the implementation of advanced technologies, such as AI-driven quality control systems and blockchain-based traceability, could enhance regulatory compliance and improve product

authenticity.

Furthermore, regulatory gaps in food safety monitoring highlight the need for more robust enforcement mechanisms. Strengthening collaboration among international food safety organizations and national authorities could lead to the standardization of regulatory practices, benefiting manufacturers and consumers alike. By addressing these regulatory inconsistencies and leveraging technological advancements, the dairy industry can ensure higher safety standards, improved product quality, and greater consumer trust in melted cheese products.

In conclusion, the findings underscore the necessity of rigorous food safety standards, enhanced regulatory cooperation, and technological innovations to optimize the quality and marketability of melted cheese products. Future research could explore the impact of emerging preservation techniques and ingredient modifications to further improve the stability and nutritional profile of melted cheese.

Conclusion

The study of melted cheese products and their regulatory requirements reveals the critical importance of food safety standards, ingredient composition, and labeling regulations to ensure consumer health and product quality. Based on an extensive review of international and national regulations, expert insights, and industry practices, the following key conclusions can be drawn:

1. Standardized Product Features

Melted cheese products must comply with **defined compositional criteria**, including moisture content, fat content, protein ratio, and permissible food additives such as emulsifiers and stabilizers. Variations in formulation are subject to regulatory guidelines, ensuring consistent texture, flavor, and shelf stability.

2. Regulatory Compliance and Food Safety

International food safety organizations such as Codex Alimentarius, FDA (USA), EFSA (EU), and GOST (CIS countries) have established strict regulations governing microbiological safety, heavy metal limits, and contamination control. Compliance with these standards is critical to prevent health risks and maintain high-quality manufacturing practices.

3. Labeling and Consumer Transparency

Regulations require that melted cheese products be labeled accurately, specifying ingredients, nutritional values, allergens, and food additives. Clear distinctions between natural and processed cheese variants help inform consumer choices and prevent misleading marketing.

4. Challenges and Regulatory Gaps

Differences in regional regulatory frameworks create challenges for global trade and harmonization efforts. The lack of uniform standards for additive usage and labeling among different jurisdictions highlights the need for increased global alignment in food safety regulations.

5. Future Recommendations

- **Enhancing international collaboration** to create harmonized safety and quality standards.
- **Stronger enforcement of food safety measures** through regular monitoring and inspection.
- **Adopting technological advancements** (e.g., AI-based quality control, blockchain for traceability) to improve **product authenticity and compliance tracking**.

Final Remark

Ensuring compliance with melted cheese product regulations requires cooperation between regulatory agencies, manufacturers, and food safety organizations. Strengthening standardization,

transparency, and technological innovation will lead to safer, high-quality cheese products, benefiting both consumers and the dairy industry.

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