World Food Programme

Technical Specifications for

CANNED PULSES-CANNED KIDNEY BEANS IN TOMATO SAUCE- UKRAINE

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1. Introduction

This specification applies to **canned kidney beans in tomato sauce** (hereafter called the product) purchased locally by WFP.

Specific colour of the beans may be requested in the contract (e.g., white or red).

2. Standards and references

Except when specified otherwise in the contract, the product shall comply with latest versions of recognized international standards and best practices and/or guidelines such as:

- ДСТУ 6074:2009 Консерви. Квасоля консервована. Технічні умови (Ukraine Standard)
- CODEX GENERAL PRINCIPLES OF FOOD HYGIENE INCLUDING ANNEX "HAZARD ANALYSIS AND CRITICAL CONTROL POINT (HACCP) SYSTEM AND GUIDELINES FOR ITS APPLICATION" (CXC 1-1969)
- CODEX CODE OF HYGIENIC PRACTICE FOR LOW AND ACIDIFIED LOW ACID CANNED FOODS (CXC 23-1979)
- CODEX CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF INORGANIC TIN CONTAMINATION IN CANNED FOODS (CXC 60-2005)
- CODEX GENERAL PRINCIPLES FOR ADDITION OF ESSENTIAL NUTRIENTS TO FOODS (CXG 9-1987)
- CODEX GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOOD AND FEED (CXS 193- 1995)
- CODEX GENERAL STANDARD FOR FOOD ADDITIVES (CXS 192-1995)
- CODEX GENERAL STANDARD FOR THE LABELLING OF PREPACKED FOODS (CXS 1-1985)

3. RAW MATERIALS

Product shall be manufactured from ingredients that are fresh, of good quality, free from foreign materials and substances hazardous to health, that comply with Codex Alimentarius and relevant food laws and standards of the originating and recipient countries. The quality of raw materials should be adequate so that the final product will meet all requirements specified in this document.

Allowed ingredients are the following: beans, tomato paste/sauce, water, salt, sugar pepper. Addition of starches/flour is not allowed.

Natural total soluble solids (NTSS) in tomato sauce shall not be less than 14%.

4. PROCESSING

4.1 Food safety and risk assessment at manufacturing premises

For compliance with Codex standards, the processor shall be able to demonstrate by principle and practice the adoption, implementation and recording of:

- Good Manufacturing Practice
- Hazard Analysis Critical Control Point program
- Global Food Safety Initiative (GFSI) scheme

In this context an appointed WFP staff/ WFP appointed Inspector / Quality Surveyor is entitled to visit the factory without prior notice during any period when WFP product is being manufactured to check that production is done as per WFP contract specification. The Inspector / Quality Surveyor may request to see:

- **Records** (e.g. names of people in charge of the process and quality control, temperatures of the process, mixing times / net contents, cleaning schedules, CCP monitoring, traceability etc.).
- **Procedures** (e.g. cleaning, personnel hygiene, risk assessment and HACCP, environmental monitoring programme, sampling & analysis, product release and control of non-conformance etc.).
- **Instructions** (e.g. process instructions, cleaning instructions, zoning instructions etc.).
- The **quality manual** for the process or factory.
- Conditions in the factory (process rooms, warehouses, laboratories, cloakrooms, factory grounds, utility rooms, etc.)

4.2 Thermal process establishment

The manufacturing facility shall establish the thermal processes used to assure commercial sterility of its canned products through scientific validation studies. Thermal process establishment must consist of two parts: 1) temperature distribution studies specific to the process lines and retort systems used; and 2) heat penetration studies specific to the product form, fill medium, ingredients and can size. The results for such studies must determine how the minimum Fo value to achieve commercial sterility is achieved when the operating parameters for the facility's cook schedules are followed. The studies shall also determine the critical factors for the thermal process, provide alternative process schedules, document the retort configuration and instrumentation, determine vent schedules and cooling protocols. Retort records must provide proof that these are monitored and complied. Such records shall be reviewed by a trained individual within 24 hours of the completion of the cook. Thermal processes must be established prior to use and validated at a frequency that reflects any changes that may impact the safety of the process or product.

In the absence of such validation triggers, thermal process validation may be done annually or once every two years. The cans should be shelf stable even when stored under tropical conditions (>40 °C). Risk of thermophilic spoilage should be adequately managed by the producer (e.g. appropriate thermal treatment, raw material controls, stability studies).

5. Product Specifications

5.1 General requirements

The product shall comply with requirements stated in Table 3 of this document.

5.2 Contaminants

The product shall be free from contaminants in amounts which may represent a hazard to health. The product shall comply with those maximum contaminant limits established by the Codex Alimentarius for this commodity. This includes compliance with Codex General Standard for Contaminants and Toxins in Food and Feed (CXS 193-1995) and Codex Maximum Residue Limits for pesticide residues. Additionally, the product shall meet the requirements stated in Table 4.

5.3 Hygiene

It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969), and other Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to these products. To the extent possible in good manufacturing practice, the products shall be free from objectionable matter. When tested by appropriate methods of sampling and examination, the product:

– shall be free from micro-organisms in amounts which may represent a hazard to health;

– shall be free from parasites which may represent a hazard to health; and

– shall not contain any substance originating from micro-organisms in amounts which may represent a hazard to health.

5.4 Shelf life

Unless stated otherwise in the contractual agreement, the product shall have minimum 36 months shelf life when stored dry under tropical conditions of storage (>40 °C). The supplier should conduct its own shelf life studies using methods in line with WFP shelf life study requirements.[1]

5.5 Fit for human consumption guarantee

Suppliers shall have to check the quality of their products and guarantee that the product is 'fit for human consumption'.

6. Packaging

6.1 Primary packaging

The products covered by the provisions of this specification must be packed in appropriate packaging which safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product, and fit for storage and multiple handling. Primary packaging must be food grade and comply with general requirements showed in table 1.

Weight and quantity tolerance must meet The International Organization of Legal Metrology International Recommendation OIML R 87[2].

Table 1: General requirements for primary packaging

Commodities	Net weight/ volume	Packaging requirements
Canned kidney bean	0.5 to 1.0 kg can	The metal containers (tins) must be coated internally and externally with lacquers appropriate for the product. Specifications and guarantees for the material, lacquers and other treatments used shall be available. Likewise, the facility must obtain the acceptable ranges and limits for the double seam dimensions and other characteristics of the filled can specific to the can type, size and supplier. Together with fill standards required for the product, these specifications will be used to ensure the finished product is hermetically sealed during the seaming operation.

[1] https://foodqualityandsafety.wfp.org

[2] OIML R 87 Quantity of commodity in prepackages www.oiml.org/en/files/pdf_r/r087-e16.pdf, latest edition to be followed.

6.2 Secondary packaging

All weak, torn, dirty, used or unserviceable cartons to be rejected outright and shall be replaced at supplier's cost.

Two percent of spare printed carton as per marking requirements must be shipped along with the cargo and included in the price.

Table 2 Secondary packaging requirements

Net weight	Packaging requirements
Max. 20kg	New, strong cardboard cartons, manufactured from well-constructed double walled corrugated board (5 ply) with a grammage of minimum 900 grams per square meter. - Edge crush resistance of carton shall be minimum 12 kN/m. - Carton seams should be glued, stapled. Cartons shall be fully filled and stacked well for maximum strength. Slip sheets or plywood should be placed inside each container to provide the required stacking strength. Pallets with appropriate stacking configuration could also be used.

7. Marking

As per contract. Labels of package and carton must be approved by WFP.

The labelling of the product shall comply with Codex General Standard For The Labelling Of Prepacked Foods (CXS 1-1985).

8. Stuffing of Containers and other transport vehicles[3]

If pallets[4] are used for transportation : it is highly recommended to have 3 first bottom layers placed as column stacking, the rest can be interlocked (cross-stacking) for load stability. Pallet shall be wrapped in a suitable manner (locked to the pallet, enough containment force) and the cartons should be banded when necessary. The cartons shall be secured to pallets in order to prevent any damage to the contents or packaging during transport. Pallet used should be strong enough to support the charge during transportation. Pallets shall be stackable (minimum double stock) without damage to the cartons during shipment. The pallets are recommended to be heat treated as per ISPM 15 standards (methyl bromide fumigation is not allowed).

If no pallets are used for transportation: dunnage (of strong sheets such as carton, plywood…) should be placed inside each container/vehicle at every three layers of cartons to provide the required stacking strength. In addition, protecting material like air bag, carton, polystyrene, can be used. Also, kraft paper shall be adhered to all internal sides, door, and floor of container. Kraft paper also need to be placed on the top of packaging.

For transportation, unless fully shrink-wrapped pallets are used, and unless otherwise specified in the contract, it is highly recommended to place desiccant at appropriate location in order to absorb moisture.

Supplier needs to use high quality desiccant and calculate the quantity of desiccant based on:

- Efficiency of desiccant
- Length of time in transit in container
- Container capacity

Supplier needs to provide in the offer the type of desiccant and quantity to be used for the consignment.

The following table provides a guideline on the quantity to be used:

[3] For more details, please refer to container loading procedure: https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp254688.pdf

[4] Slip sheet can be used instead of pallets upon agreement with WFP.

Table 3: Guideline on the quantity to be used for calcium chloride-based desiccants:

Estimated days in container	20 ft container	40 ft container
15-59 days	9.00 kg	17.50 kg
60-89 days	11.25 kg	22.50 kg
90-120 days	13.50 kg	25.00 kg

Better alternative material can be used upon agreement with WFP.

Empty containers/vehicles shall be clean, pest free and free of damage, odours and previous cargo remains. Ventilation holes shall remain clear and unsealed.

9. Storing

The product shall be stored under dry, ventilated and hygienic conditions and away from direct sunlight.

10. Analytical Requirements

As per contractual agreement, WFP can appoint an inspection company to check that the food matches requirements of this specification. Analytical tests in table 4 are usually utilized, and additional tests might be performed. Suppliers shall follow its own food safety and quality management plan. WFP reserves the rights to change the testing plan at any time.

Table 4: List of compulsory tests and reference method

No	Tests	Requirements	Reference methods (latest versions)[5]
1	Color, size and other grains	Kernels homogenous in colour, size, and free of other grains Colour as per contract	
2	Smell, color and taste of product	Colour / taste (Special) free of abnormalities	
3	Foreign materials, impurities and broken parts	Product should be free of foreign materials, broken pieces and live and/or dead insect or its parts	
4	Size and other grains	Bean and liquids should keep its natural colour	
5	EDTA	Max. 250 mg/kg	
6	Dark part in the surface	Max. 10% of the internal surface	
7	Drained weight	Min. 60%	AOAC 968.30
8	Kernels damaged by Insects	Max. 1%	
9	Food Salt	Max. 2%	ISO 3634
10	Pb	Max. 0.1mg/kg	ISO 11212-1, 2, 3, 4
11	As	Max. 0.1mg/kg	ISO 11212-1, 2, 3, 4
12	Tin	Max. 200 mg/kg	AOAC 985.16
13	Acidity (Citric acid Based)	Max. 0.5%	ISO 7305
14	Swelling test (37ºC for 7 days)	Should not show any sign of swelling after incubation	
15	Swelling test (55ºC for 5 days)	Should not show any sign of swelling after incubation	

[5] Or equivalent validated methods.